FLIGHT

The AIRCRAFT ENGINEER AND AIRSHIPS

FIRST AERONAUTICAL WEEKLY IN THE WORLD

Founded in 1909 by Stanley Spooner

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Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list:—

Apr. 27-May 6. International Aero Show, Geneva.
May 7-12. International Air Post Exhibition, Royal Horticultural Hall, Westminster.
May 17-June 2. Royal Tournament, Olympia.
May 18. Entries close at ordinary fee for King's Cup Race.
May 21. Air Display, Loughton Aerodrome, Essex.
May 24. Empire Air Day.
May 26. Opening of Doncaster Airport.
May 27. Deutsch de la Meurthe Cup.
May 30. Entries close at double fee for King's Cup Race.
May 31. Conversazione and "Stalling." Wilbur Wright Memorial Lecture, by Prof. B. Melvill Jones, before R.Ae.S.
June 1. Entries close at 12 noon for London-Melbourne Race.
June 2. Brooklands Air Race Meeting.
June 3. London Aeroplane Club Garden Party, Hatfield.
June 9. Reading Ae.C. Annual "At Home."
June 16. R.A.F. Reserve Flying Club Annual Flying Display, Hatfield.
June 23. Lancashire Ae.C. Air Display, Woodford.
June 23. Henly Rally, Heston Airport.
June 16. Royal Air Force Flying Club Display. Hatfield Aerodrome.
June 30. Royal Air Force Display, Hendon.
July 3-9. 4th International Congress for Applied Mechanics, Cambridge.
July 7. Opening of Leicester Airport.
July 8. French International 12-Hours Reliability Trial.
July 13-14. King's Cup Race. Start and finish at Hatfield.
July 21. Round the Isle of Wight Air Race.
July 21-22. French Grand Prix.

Speed of Commercial Aircraft

SELF-DEPRECIATION is commonly said to be one of the besetting sins of John Bull. Nowadays we hear a good deal too much about the superiority of American commercial aeroplanes over British commercial craft in the matter of speed. It is true enough that on the internal air routes of the United States the passenger machines cruise at some 180 m.p.h. with 16 or 18 passengers on board, while the mailplanes carry the letters between New York and San Francisco at even higher speeds. The suggestion is made that British air lines ought to do likewise.

Far be it from us to maintain that we ought to be satisfied with our present speeds or that we should not make every endeavour to raise them—always provided that we do not sacrifice some even more valuable quality. Our designers are quite capable of producing fast machines, as the Schneider contests have proved, but speed is a commodity which has to be bought at a price, and it is possible to pay too high a price for it. A sacrifice of a degree of safety would be too high a price, and so would definite loss of commercial qualities. Even comfort of passengers must not be sacrificed without thought. If we can increase our speed without making unreasonable sacrifices, then the speed ought to be increased, but the change must be made with due thought and care.

Conditions on the New York-San Francisco airway are rather unique. In all ways, such as large aerodromes for fast-landing machines, equipment for night flying, that airway was laid out, in the days when the United States were very prosperous, almost regardless of cost. Such conditions do not obtain everywhere in the world. When one considers the American companies flying outside the United States, *e.g.*, Pan-American Airways, we do not find any striking superiority in speed over British lines. In a recent article in *The Times*, Maj. R. H. Mayo pointed out that the "Clipper" flying boat used by Pan-American Airways cruises at 110 m.p.h., carries a pay load of 5,500 lb. and has a range of 650 miles. This is the best type used by Pan-American Airways, and it is in the same class as

the Short " Scipio " type used by Imperial Airways. The latter, moreover, is more seaworthy, more silent, and takes off with full load in less than half the time required by the " Clipper."

British designers are not standing still. Midland & Scottish Air Ferries are using the Avro 642, which cruises at 135 m.p.h. and carries 16 passengers at a shilling a ton-mile, or one penny per passenger per mile. This is remarkably economical flying at any speed, and a cruising speed of 135 m.p.h. is quite praiseworthy. We may be proud of this performance. Greater speed will doubtless come and will be welcome as it comes; but we should be loth to see it brought about by reckless sacrifice of such splendid economical qualities.

The Geneva Aero Show

AT Geneva aircraft must recently have become a word of ill omen. To the members of the Disarmament Conference they have been represented as the fell slayers of women, children, and all innocent civilians. Bombs of poison gas have been represented as their regular weapons, and impatient idealists have clamoured for the abolition of all military and naval aircraft, and in particular of all bombers. The realists have added to the confusion of nations by suggesting that it would be an excellent thing for the peace of the world if everybody except themselves would cut down their air forces. As for themselves, their special circumstances unfortunately made that impossible. And in any case, added everybody, what could be the use of abolishing martial aircraft if thereby every civil aeroplane became a potential bomber? Altogether aircraft must have come to stink in the nostrils of Geneva.

It was therefore a happy idea to hold an international exhibition of sporting and touring aeroplanes at Geneva, and an account of it by a special correspondent of FLIGHT will be found on another page of this issue. The exhibition should do something to recall to the minds of Geneva the fact that aircraft have their humane and happy functions. The exhibition followed on the International Aeronautical Conference which was held in Geneva the week before, and this should also have emphasised the peaceful and beneficent characteristics of aircraft.

As a matter of fact, the Swiss are a very air-minded people. Their chief flying company, Swissair, has shown remarkable initiative by buying American aeroplanes and instituting the fastest air service in Europe. Squeamish passengers might not always care to fly over such terrain as Switzerland can provide in single-engined machines, but we believe that so far all has gone well, and in any case the service is a good example of Swiss enterprise in the air. Moreover, there are numerous air trips which are designed to show the visitor the beauties of Switzerland from above. This particular form of flying activity has not been much developed in other countries, and again credit must be given to the Swiss for conceiving a novel use for aircraft. The idea might usefully be copied in other countries, but not all countries have the lofty mountains which make an imposing spectacle when the sightseer is some thousands of feet up in the air. The little hills of Great Britain often look grand enough from the ground, but are flattened out when viewed from above. We need to be able to fly low with safety before we can greatly impress the air tourist with the beauties of the Grampians or the Lake District.

Perhaps after all an exhibition of civil aeroplanes may only result in driving the thoughts of Geneva back to questions of disarmament. The visitors to the exhibition may reflect that, if martial aircraft were to be banned, what they see before them are the bombers of the future, and they may realise the impossibility of any form of international supervision. If that is the outcome, or one outcome, of the exhibition it will certainly serve a useful purpose.

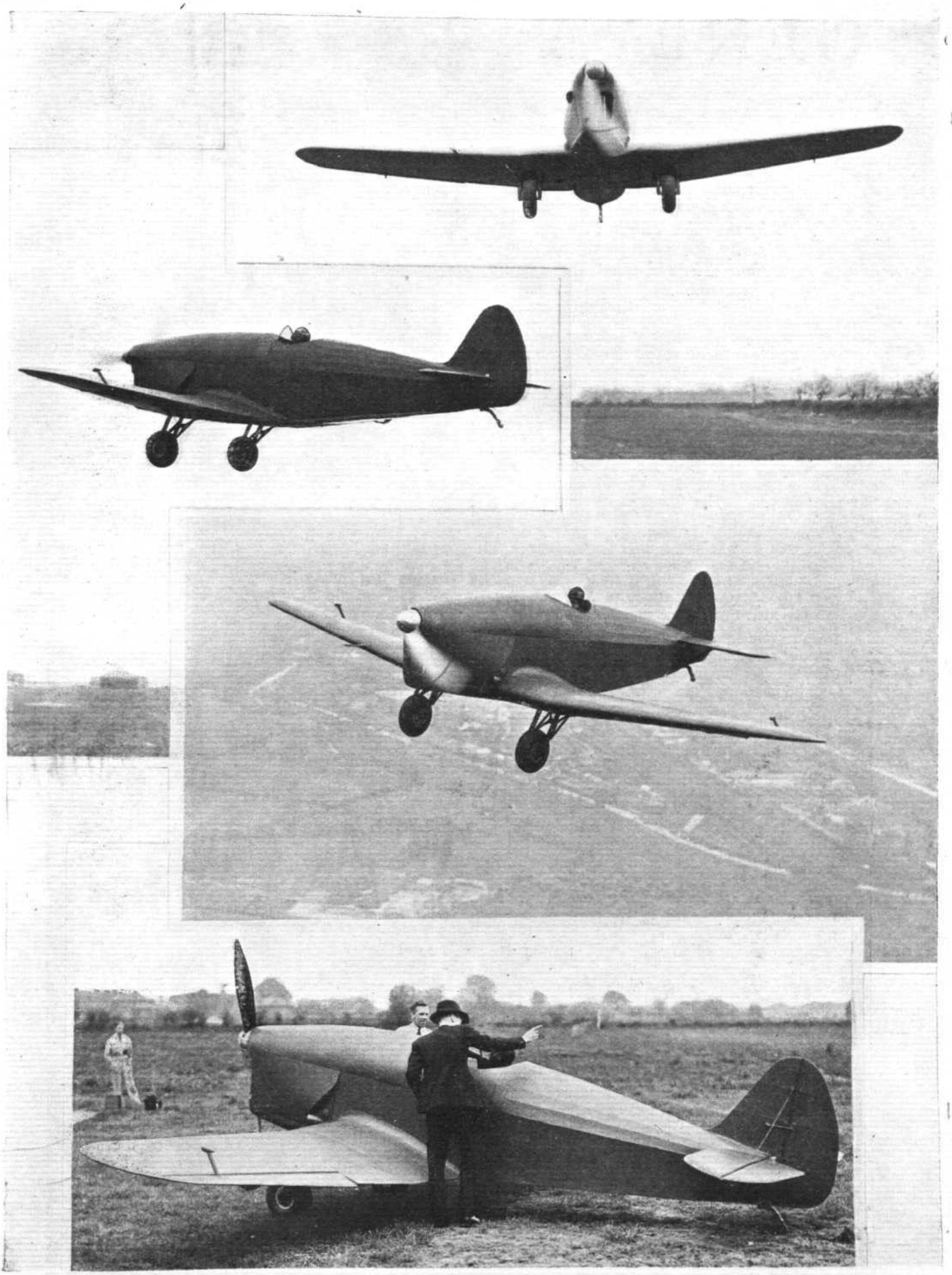
Autogiros for Convoy Work

THE greatest problem which we had to solve during the war was the threat of starvation when the U-boats were sinking our food ships. This problem was solved by the system of convoys escorted by light warships and by aircraft. When aircraft were overhead the submarine commanders dared not show a periscope for fear the observer should spot it and send the destroyers racing to the spot with depth charges ready. Not a vessel was sunk while it was under aerial escort.

The type of aircraft to be used for such work required careful consideration. Ultimately the non-rigid airships were found to be the most suitable type, because they could more easily keep station with the convoy, and because of their long endurance. Landplanes and seaplanes could only keep with the convoy by circling over it, and their limited tankage would not allow them to keep on doing that for many hours. But it is rather more than doubtful whether airships can be used again for convoy work in the narrow seas, at least if the enemy were to hold bases from which their aeroplanes could attack them. It is never too early to think of what we ought to do in the next emergency, and the question now arises could not the autogiro be used for convoy escort work?

The autogiro has the ability to fly extremely slowly, thus conserving its fuel and making easier the observer's task of scanning the surface of the sea with care in all directions. Moreover, with its power of rising from a small space and landing in even less, the autogiro might well use the deck of a food ship as its aerodrome. Several ships in each convoy could start with autogiros on board, and so a system of reliefs could be organised after each had spent a certain time in the air. A surface escort of destroyers would still be needed, but the use of autogiros would set free our flying boats and other R.A.F. craft for other duties. It is an idea which seems worth consideration, and if so it is also worth trying out in practice.

WELL NAMED!



THE COMPER "STREAK": In a recent issue of "Flight" we reported that a certain amount of aileron flutter had arisen. By giving ailerons a very narrow chord and fitting mass-balances, as indicated by the lower illustration, the trouble has completely disappeared. (FLIGHT *Photos.*)

AT GENEVA

Organised by the Aero Club of Switzerland, the International Aero Show at Geneva is the first of its kind

British, Swiss, German, American, Italian and French aeroplanes are being shown in the Palais des Expositions this week in Geneva. They are, by the rules, confined to sporting or touring types, a classification which really means aeroplanes suitable for the private owner or for club instruction. There is, apart from a small Swiss machine more suitable for "round-the-aerodrome" use than for serious touring, only a new Messerschmitt, which is not familiar to "Flight" readers

THREE English companies are between them showing five types; three French companies, four types; two Italian companies, two types; three German companies, three types; three Swiss companies, six types, three of which are gliders and one of which is a "Moth"; and finally the Swissair company is showing one of the American Lockheed "Orion" aeroplanes which they use on their lines.

The largest display area held by any aircraft manufacturing firm is that used for the exhibition of de Havilland aeroplanes. The machines shown are a "Leopard Moth" ("Gipsy Major"), which has been sold to M. Marcel Devaud, Vice-President of the Geneva Section of the Swiss Aero Club and President of the organising Committee of the Show, and which is, as usual, beautifully finished inside the cabin so that it looks most attractive; a "Tiger Moth" ("Gipsy Major"), which is fully equipped for instrument and inverted flying instruction; and a standard "Moth Major" ("Gipsy Major"). de Havilland aeroplanes are used very extensively throughout Switzerland, and several foreigners who live permanently in that country use "Leopard Moths" for their own transport purposes. The D.H. stand is decorated with an attractive display of photographs, many of which were taken for them by FLIGHT. They also exhibit two models of the Irvin air-chute.

A Miles "Hawk" ("Cirrus III") is being shown by the local agent. This is the standard open two-seater with a particularly well polished fuselage, a feature upon which Phillips & Powis, the makers, have concentrated for some time past. Its low cost and obvious practicality created considerable interest.

Blackburn's have a "B2" open, side-by-side, two-seater with a "Hermes IV" engine. This is the only aeroplane in the show with a metal covered fuselage. It is quite standard and well known in England. The same

UN COIN ANGLAIS: In the foreground the de Havilland Aircraft Co. are together with their agent showing three types of aeroplane. On the left is the Miles "Hawk," and on the right can be seen Herr Schwabe's "Klemm" in which he has recently returned from a flight to Capetown.

MONSIEUR LE PRÉSIDENT : M. Pilet-Golaz, the President of Switzerland, arriving with his family at Geneva in the Curtiss " Condor " of the Swissair Co.

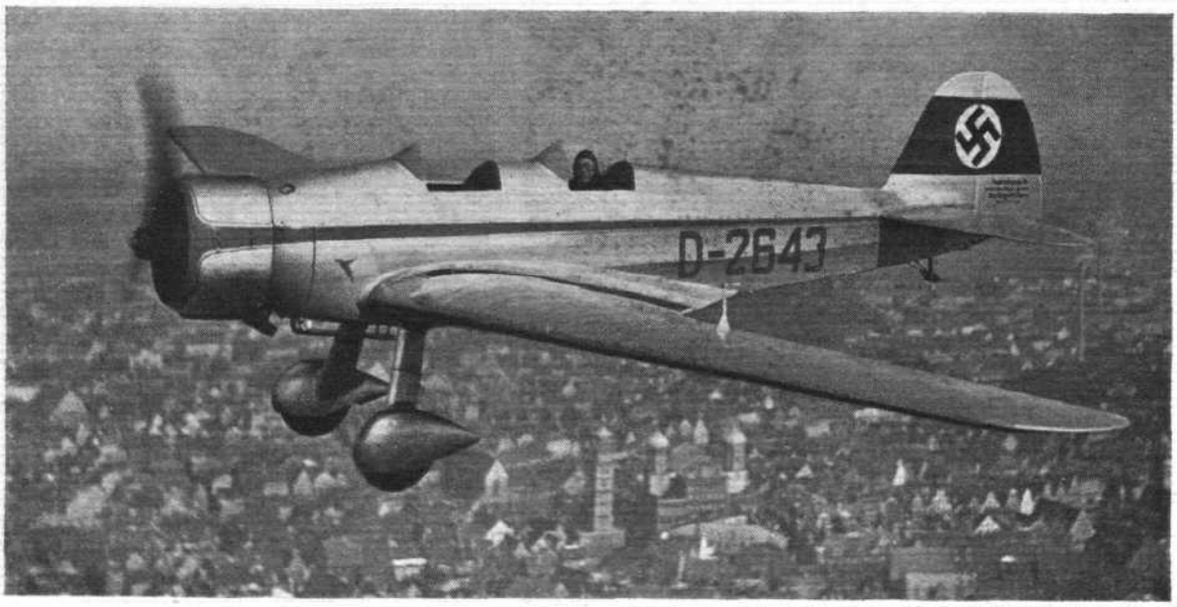
company is exhibiting a " Hermes IV " engine, a type of which they are now the makers.

The Potez 58 is quite a good looking machine, and is a development of the types 36 and 43 which are widely used by private owners. As with the older models, the wings carry fixed Handley Page slots, so delightfully named by the French " Bec de Sécurité." The machine is a semi-cantilever strutted monoplane with folding wings and has accommodation for three people. The front two sit side by side, while the third has a folding seat of the occasional type behind them. The construction is mainly of wood, but steel tubes are used for reinforcement in some parts. The fuselage is plywood covered but fabric is used for the tail units. The engine, which is cowled with a large ring of the Townend type, is a six-cylinder radial Potez 6B, giving 120/140 h.p. The top speed is 118 m.p.h. (*190 km/h*), landing speed 34 m.p.h. (*55 km/h*), ceiling 18,000 ft. (*5 500 m*), landing run 66 yd. (*60 m*), and take-off run 109 yd. (*100 m*). Despite the seating arrangement, the outlook for the pilot does not appear appreciably worse than when he sits alone with the passengers behind him. The engine is interesting, and although the six-cylinder arrangement necessitates a double-throw crank shaft, it is claimed to be well balanced.

Farman's are showing the 402 which, in its general characteristics, resembles the 400. It is a full cantilever three-seater monoplane powered with a five-cylinder radial Lorraine engine of 110 h.p. The seats are placed one behind the other. The general construction is of wood with plywood covering. The undercarriage is somewhat like that of the " Puss Moth," but with the axle and radius rod faired in together. The maximum speed is 120 m.p.h. (*194 km/h*). It makes quite a clean looking job, but there are decided drawbacks to the one-two-three seating arrangement.

Caudron-Renault have a C.282 " Phalene," the C.362 Coupe Deutsch machine and a Renault " Bengali " engine on their stand. The " Phalene " is the type in which such good performances were made in the Egyptian Meeting at the end of last year. The model shown does not differ from the standard type, which is a high-wing semi-cantilever monoplane with a wide undercarriage. The construction is composite, of wood and metal. The former is used for the wing spars, longerons and other main members. Four persons can be carried seated in pairs side by side, in comfort. The maximum speed at ground level is 115 m.p.h. (*185 km/h*), the ceiling 14,760 ft. (*4 500 m*), landing speed 44 m.p.h. (*70 km/h*), and the total weight 2,425 lb. (*1 100 kg*). The engine usually fitted is the four-cylinder inverted Renault " Bengali " of 120/145 h.p., and is the same as that shown separately on the stand. The control column is of the hanging kind, and the cabin doors open upwards so that egress is particularly easy. Suspended above the stand is the Caudron C.362, which competed in last year's Coupe Deutsch. It is chiefly remarkable for its scant wing area, its long nose carrying the " Bengali " engine and the small, completely covered, cockpit for the pilot. It is, of course, purely a racing machine, which has gained many records, but it is nevertheless rather forbidding from the point of view of piloting—to say the least of it. The

LA OUVERTURE OFFICIELLE : In this view the Swiss President is examining the Caproni biplane. In the foreground is the Comte aeroplane, a Swiss production.



DEUTSCHE SCHÖNHEIT: The Messerschmitt 35 is very clean and has a fine performance. The Swastika leaves no doubt as to its country of origin.

company also had one of their twelve-cylinder water-cooled 600/700 h.p. engines on the stand.

The Italian Exhibit

"Motherly looking" best describes the Caproni 125. It has no forward view at all for the pilot or passenger, and it is therefore a good thing, as one critic was heard to say, that blind flying instruments were fitted. The general layout follows that of the normal two-seater tandem biplane. The fuselage is deep, with a large belly underneath containing the fuel tank. The engine has been kept high in front of the cockpits, and the wind screens are merely sheets of cellon covering the cockpits and reaching no higher than the line of the engine. The pilot and passenger can only, therefore, look at the dashboards, unless they hang out over the side, and even to do that they have to open their "lids." The wings are as small as the fuselage is large, and the whole does not give the impression that the speed range can be large. A Colombo 150 h.p. six-cylinder engine supplies the power. An interesting point is the ring oil cooler, which is placed around the cowling opening just behind the airscrew boss; it looks as if it might be a good feature provided the air at that point is not too dead. The stand also carries several models and photographs of other Caproni aeroplanes.

The other Italian representative of the aircraft manufacturing industry is Savoia. Up to Sunday this machine had not arrived, but it was understood to be the same type of small amphibian which we illustrated in connection with the Egyptian Meeting. On Saturday a Breda 39 low-wing monoplane was put on the stand, a machine which was also at Cairo.

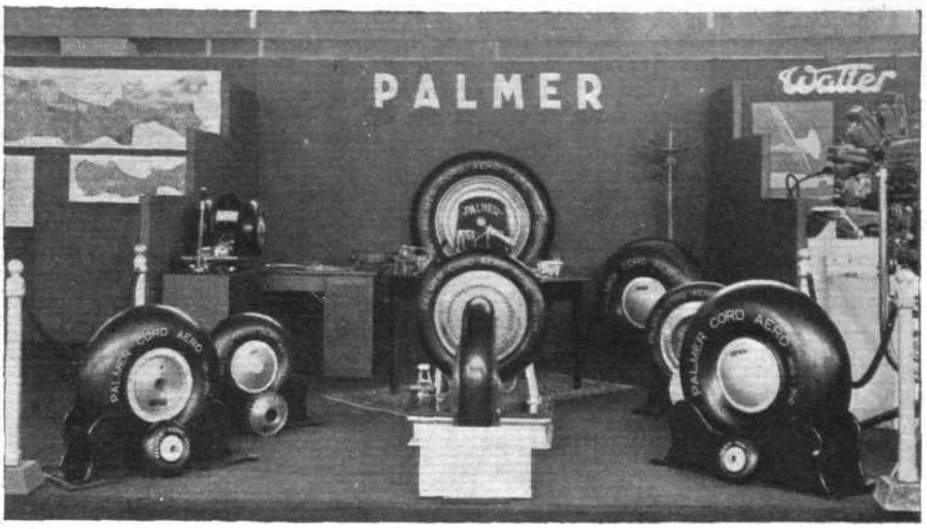
German Aeroplanes

Pretty to look at but rather giving a feeling of flimsyness, the Adler was the only all-steel aeroplane in the show. It is built by Adlerwerke at Frankfurt, and sells at about £690 in Switzerland with the 80 h.p. four-cylinder inverted Hirth engine. It is quite a normal two-seater tandem biplane, with a fair amount of stagger and the pilot's cockpit placed well aft. The top speed is given as 108 m.p.h. (*175 km/h*), the landing speed as 40 m.p.h. (*65 km/h*), and the climb as 3½ min. to 3,280 ft. (*1 000 m*). This aeroplane was previously known as the Gerner, and the type has been used for some years in German schools. Adler only started building it in January this year. It is of welded construction throughout with fabric covering for the fuselage and supporting surfaces.

The Klemm being shown is an old friend to readers of FLIGHT, as it is the property of Herr Schwabe, and the machine in which he not only competed in the Egyption Circuit of the Oases but also made a flight to Capetown and back. Neither its Siemens radial engine nor its cabin seating four persons has been specially prepared for the Show. In fact Herr Schwabe only arrived at the aerodrome a few days before the opening, and was then first asked by the Klemm factory to allow his property to be exhibited. Surrounding it on the stand are an interesting range of models of other Klemm aeroplanes.

Undoubtedly the nicest looking stand is that of the Bayerische Flugzeug Werke. They are showing a Messerschmitt M.35, which is finished with a highly glossy pale blue cellulose, and all around the stand are pots of pale blue hydrangeas. Certainly no

ROUES PNEUMATIQUES: Dunlop's Stand is at the side of the Main Hall and includes their pneumatic wheel brake as well as a range of their tyres.



MORE ROUES PNEUMATIQUES: A fully streamlined wheel forms a centre attraction to Palmer's Stand. They are showing a very wide range of tyre and wheel sizes. Their pneumatic brake was worked incessantly during the Show for demonstration.

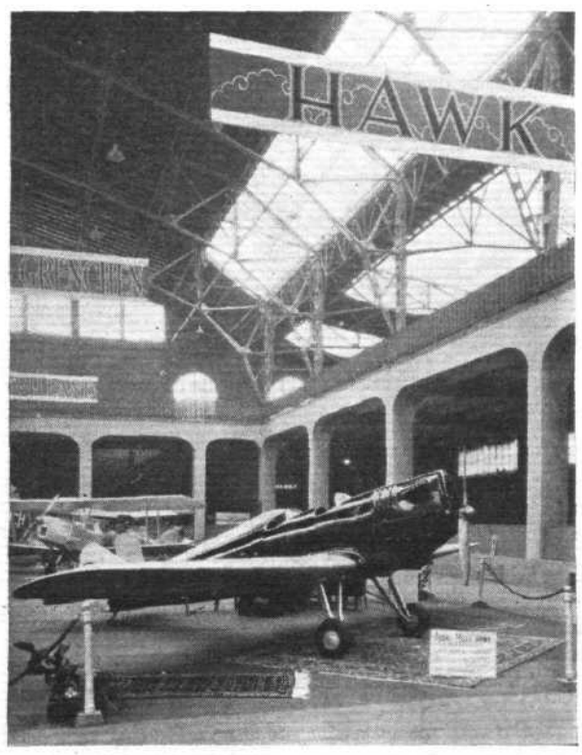
lady can be tempted to pass that stand by without having a good look at it before doing so. The M.35 was brought out late last year as a development of the previous models which had competed in the European "Rundflug." The engine is a Siemens seven-cylinder radial, Sh. 14A, giving 150 h.p. It is well cowled in a complete ring of the N.A.C.A. type, which is easily detachable and which extends back close to the fuselage. The undercarriage is the first point which strikes the eye, as this is of the one strut, fully cantilever type. The centre section of the fuselage carrying the wing root fittings and the undercarriage legs is of welded steel tubes. The undercarriage is so arranged that the portion of the leg immediately outside the fuselage fitting underneath the wing is the weakest part, and that in the case of failure this will give way first, thus saving the fuselage structure itself from damage. Despite the single strut design, wheel brakes are fitted, and the wheel is fully enclosed in an aluminium fairing. The cantilever wing has the added weight of six coats of dope well rubbed down, but the extra speed gained due to the superlative finish is claimed to be considerable. The wing, which is of spruce with a plywood covering, has one main spar, with a secondary one for the ailerons. It is highly tapered both in plan form and depth of section. Washout of incidence has been arranged so that aileron control is maintained below the stalling point. The fuselage is of welded steel tube with a fabric covering, and this latter is as highly finished as the wing. Luggage is carried in two wing root lockers placed one each side. Special suit cases made to fit these lockers are supplied with each machine. The inside of the cockpits is as well finished as is the outside of the machine. Brown leather is used not only for the seats but also for the sides of the cockpit, and altogether the M.35 is likely to attract quite a lot of attention. Its top speed is 143 m.p.h. (*230 km/h*), its landing speed 53 m.p.h. (*85 km/h*), its initial climb 1,080 ft./min. (*5,5 sec.*), and ceiling 19,030 ft. (*5 800 m*).

Junkers is the only other German aircraft manufacturer showing, and they have contented themselves with models of the G.38 four-engined machine and the Ju.52 three-engine liner of the type often to be seen at Croydon.

Swiss Aero Club

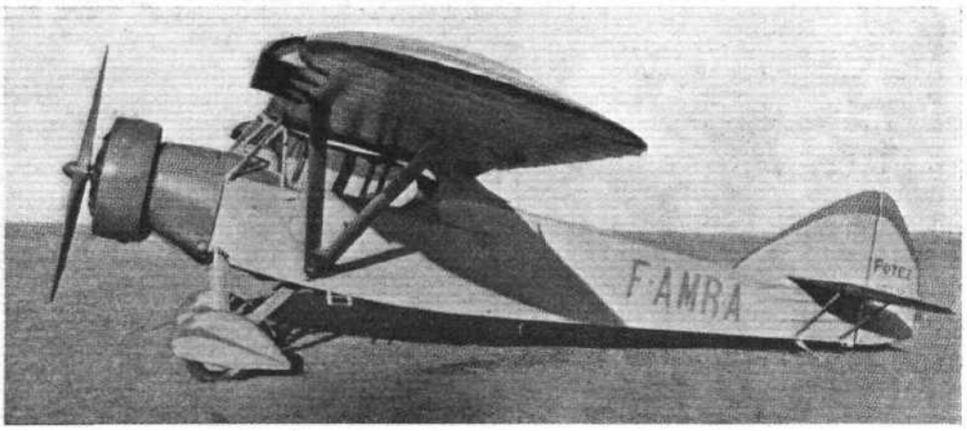
The Geneva section of the Swiss Aero Club supported the Show by having one of the Club's "Moth Majors" and also a glider of the primary training type on their Stand. Apart from these exhibits the Stand was decorated with various photographs and documents giving full details of the Club's work. Their machines are housed out at Cointrin aerodrome, which is the airport of Geneva, and if one is to judge from the amount of flying done during the week-end we were there, the Club is a very live one.

There were only two actual Swiss aircraft manufacturers showing. The first of these was M. Alfred Comte, whose productions have frequently been described in FLIGHT, and in the Salon he was showing his latest type A.C.12. This machine has a seven-cylinder Siddeley "Genet Major" cowled in an N.A.C.A. cowling. It is a full cantilever monoplane of wood and metal construction, and bears some resemblance to the general features of the Desoutter. The fuselage utilises welded steel tube construction, and provides seating accommodation for three persons, two of them being in slightly staggered seats, side-by-side behind the pilot. The other machines of Swiss construction were those of the aircraft factory at Grenchen. We understand that this enterprise is, to a certain extent, one which was started to provide employment for the unemployed. Their power-driven model W.F.11 has a Pobjoy engine and is a two-seater tandem open biplane of a somewhat primitive looking nature. The construction is composite and must, perhaps, be taken as something in the nature of an experimental prototype rather than as a machine for serious work. It does however fly, and a maximum speed of 100 m.p.h. (*160 km/h*) is claimed, while the minimum speed is 31 m.p.h. (*50 km/h*). Shortly before the opening of the show it was this machine which towed a glider made by the same firm over the Lake of Geneva. Unfortunately the nose of the glider proved too weak to withstand the pull imposed upon it, so that it came away and the pilot dived, somewhat precipitately, into the water. Both he and his glider were however rescued, the former without anything very serious the matter with him, and the latter no further damage than that which occurred at the nose, and in this state it was shown on the stand. Another exhibit of this firm was a small single-seater biplane glider bearing in its general lines a resemblance to the W.F.11 but controlled by warping the wings.



GLÄNZEND: Its low price as well as its remarkably fine finish and ruggedness of construction caused a stream of visitors to the "Hawk" Stand.

Apart from these firms the "Swissair" company had two stands. In the body of the hall was one of their Lockheed "Orions," and around the side of the hall they had one of the Wright "Cyclone" engines, together with photographs and maps describing their work. "Swissair" are the biggest Swiss company, and besides the "Orions"



AVEC " BEC DE SÉCURITÉ " : This French cabin machine, a Potez 58, is fitted with permanently open " slots," and has very comfortable seating accommodation for three persons.

they also have " Clark G.A. 43 " high speed machines and a Curtiss " Condor." In this latter the Swiss President with his wife and family flew to Geneva on Friday for the inaugural luncheon.

Aero Engines

There were no new aero engines in the Salon. Cirrus Hermes had a " Hermes IV " on the stand. Hispano Suiza showed their six-cylinder water-cooled engines of 100 and 250 h.p. types 6 P.A. and 6 M.B. and their radial engines, 5Q, a five-cylinder engine giving 150 h.p., and 9QR, a nine-cylinder engine with an output of 350 h.p. Isotta Fraschini had one of their large 750 h.p. engines. Renault also showed an engine of nearly the same horsepower, and the connection of this with an exhibition devoted to aeronautical matters connected with sporting and touring was difficult to see. Renault however also showed one of their " Bengali's." The German exhibits included Hirth engines, these being the small four-cylinder 80 h.p. inverted and the eight-cylinder Vee inverted giving 170 h.p. At the side of the main hall the local agents of the Walter Co. of Prague were also showing their four-cylinder inverted 130 h.p. " Major " and their nine-cylinder radial 150 h.p. " Gamma."

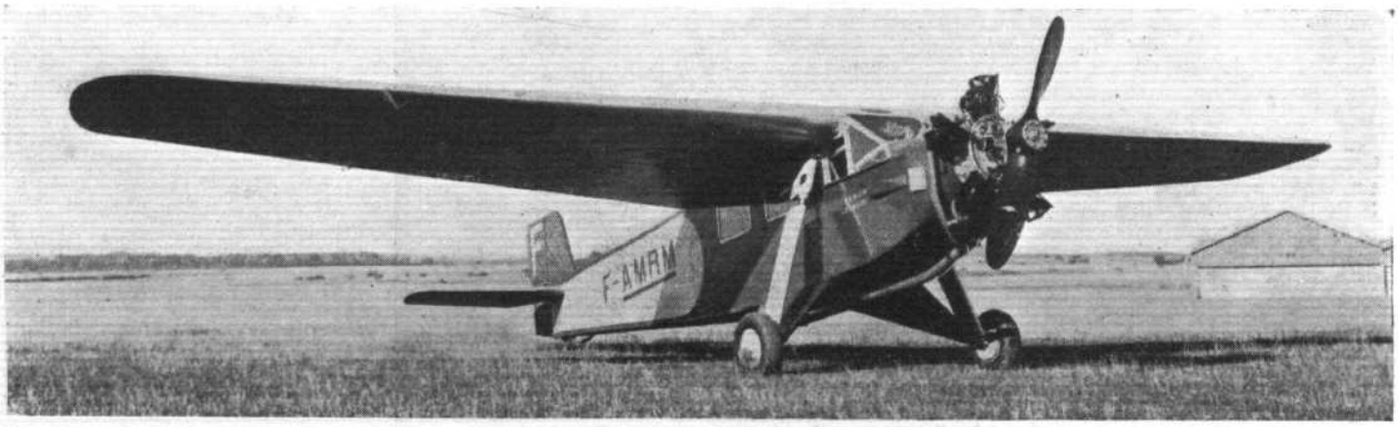
Among the lesser exhibitors who were distributed in the gallery around the main hall, there were few who had anything really new or of vital importance to show. Askania, one of the best known instrument firms in Germany, had a gyro control mechanism for operation of the rudder. Schwarz was showing his method of covering wooden airscrews with a layer of celluloid, and it will be remembered that in FLIGHT of January 18, 1934, we announced that this process had been acquired by The Airscrew Co. of Weybridge. British tyre manufacturers were well represented, as both the Palmer Tyre Co., Ltd., and the Dunlop Rubber Co., Ltd., had stands. In each case they were showing a wide range of high and medium pressure tyres, various kinds of wheels, and pneumatic wheel braking systems. The Standard Oil Co. had a rather interestingly arranged stand, which represented a half section of the cabin of a large aircraft. Visitors were able to walk through this and to see from the windows a view not unlike that which they would see from the air if they were actually flying. Scintilla magnetos were shown in operation, and the buzzing of dozens of sparks naturally attracted a large number of people to see their various kinds of magnetos.

French Government Support

A feature of the Show was the official backing given by the French Government. A large stand was arranged just inside the main entrance, which, incidentally, was probably of greater area than any other exhibit. Both the decoration and the large amount of information given is, so to speak, a stock article which is shown at all these exhibitions. Statistics, showing the growth both of France's aeroplane manufacturing industry and their air lines, are presented in a manner which cannot but help to impress the public.

On April 27 an official inaugural luncheon was held at the Hotel Les Bergues, at which the Swiss President, M. Pilet-Golaz, was present. Others we saw there were Col. E. Messner, President of the Swiss Aero Club; Col. Bardet, Chief of the Swiss Military Air Force; Col. Isler, Director of the Swiss Air Ministry; the English, French, and German Consuls; M. M. Devaud, President of the Organising Committee of the Aero Show and Vice-President of the Geneva Section of the Swiss Aero Club; M. Maurice Duval, President of the Swiss Aero Club, and Dr. E. Heiman, Director of *Interavia* and Secretary-General of the Organising Committee of the Salon.

After the luncheon the party were received at the Salon for the official opening. Accompanying them on their tour of the machines were Mr. F. G. Bertram, Deputy Director of Civil Aviation; Mr. F. Entwistle, of the Meteorological Office, and Mr. R. W. Duncan, of the Air Ministry Signals Branch, all of whom were attending the thirty-sixth session of the International Aeronautical Conference, which was held in Geneva before the opening of the Salon.



AVION DE TOURISME : The Lorraine engine on the nose of the Farman 402 looks somewhat large, but gives this three-seater cabin machine a fairly good performance.

An unfortunate accident

SINCE the above notes on the Geneva Aero Show were written we regret to learn of an unfortunate accident to a machine attending this event. Two sporting biplanes from Frankfurt, carrying one passenger each, on their way to Geneva landed at Basle at 4 p.m. on Saturday. While leaving the Basle airport after a short stop the aeroplane piloted by Herr P. Ehrhardt, of the Adler works, Frankfurt, who had his wife as passenger, crashed from 900 ft. Frau Ehrhardt was killed and her husband brought to the Basle city hospital in a critical condition.

THE NINTH

At the Annual Dinner of the A.I.D. Technical Staff Association no fewer than 440 sat down to dine

AS one of the visitors said at the 9th Annual Dinner of the Aeronautical Inspection Directorate Technical Staff Association Dinner at the Holborn Restaurant last Friday, at the present rate of increase in the number of guests it will soon be necessary to transfer the dinner to the Albert Hall. At the first of these dinners, in 1924, there were 200 diners. On Friday last this number had increased to 440, out of which the guests outnumbered the hosts by about two to one. Once more Mr. J. J. A. Gilmore was in the chair, and the guest of honour of the evening was the Secretary of State for Air, the Marquess of Londonderry.

Those who knew Lord Londonderry only as the Cabinet Minister had a very pleasant surprise at the A.I.D. dinner. Instead of the guarded, carefully-worded speech by the Secretary of State which probably most of those present had expected, they were permitted a glimpse of the man who occupies that exalted position, and let it be said at once that all and one will esteem Lord Londonderry more than they did before, and in a somewhat different light. His speech was an intensely human one, and the fact that he has become a pilot seems to have given him an insight into the everyday affairs of flying which not by any means all in such high positions can be assumed to possess.

LORD LONDONDERRY said his secretary had prepared for him a very carefully chosen speech, but he did not propose to deliver it. He had come there that evening to enjoy himself, and he doubted very much whether, in any case, they really wanted to hear a formal speech. He thought that in most cases these speeches were listened to out of politeness, and assured the assembly that they need have no anxiety. He was not going to make a long speech. He was, he said, extremely glad to be among those who, as he put it, "supported the tottering figure of the Secretary of State for Air."

Three-Point Landings

Referring to his comparatively recent taking up of practical flying, Lord Londonderry said that once in a while he did by accident make a three-point landing. He had, he said, learned to fly because the present state of the roads and road traffic frightened him, and he thought the safest place for an Air Minister would be in the air. Turning to the official toast of the evening, "The A.I.D.," Lord Londonderry said that it seemed to him that the position was that the people in Gwydyr House got all the credit and the A.I.D. did all the work. He had nothing but praise for the A.I.D., whose representatives he had come in personal contact with since taking up flying, and he felt that British aviation owed the A.I.D. a deep debt of gratitude.

Addressing himself to the British aircraft constructors, of whom many were present there that evening, Lord Londonderry said that British aircraft constructors were second to none. They had placed British aviation in the lead, and he denied categorically a statement sometimes made that Great Britain was behind other countries. Referring to his connection with aviation, Lord Londonderry said there was nothing he would like better, were such a thing possible, than to remain Air Minister for the rest of his life. Stressing the way in which the A.I.D. was spreading its activities, the Secretary of State for Air said he hoped that a message would be sent that evening to the representatives of the A.I.D. in such far-away places as Egypt, Iraq, India, Africa and Singapore.

Replying to the toast of the A.I.D., LT. COL. OUTRAM said this was the eleventh occasion on which it had fallen to him to reply to the toast. In 1924 there were only 200 people in the A.I.D. In 1926 they started delegating their work to representatives of the aircraft firms, and in that year was held the first T.S.A. dinner. This year their assembly numbered 440, which happened to be approximately the present strength of the A.I.D.

Replying to the Secretary of State in similar humorous strain as that used by Lord Londonderry, Col. Outram referred to his (Lord Londonderry's) landings, and said he thought that when the S. of S. made one of his not-three-point landings, the Avro representatives present wondered whose stamp was on the undercarriage. Col. Outram concluded by reading messages from A.I.D. representatives in Heliopolis, Kisumu, Karachi and Singapore, and also from the Colonial Secretary of Kenya. A message from Dr. Wolff, head of the Dutch aeronautical research section, gave Col. Outram the opportunity of saying how glad he was to see the work of the A.I.D. appreciated abroad also, and the circle of friends overseas steadily growing.

"The Visitors"

The toast of "The Visitors" was proposed by the Chairman of the evening, MR. J. J. A. GILMORE. Col. Outram had referred to replying to the toast on eleven occasions. He was two behind Col. Outram in that respect, in that he had had to propose the toast of "The Visitors" on only nine occasions. The reason was that at the first two dinners they had not been able to afford the luxury of having guests. Mr. Gilmore then proceeded to welcome some of the more important guests, and apologised for not having the time at his disposal to refer by name to everyone present. Mr. Gilmore referred briefly to the fact that during last year the A.I.D. was in close contact with the industry, and did not in the least feel jealous about some of the constructors running big yachts. They would not even mind the constructors becoming millionaires; in fact, there had been cases where members of the A.I.D. had even encouraged this!

Replies to the toast of "The Visitors" were made by MR. C. R. FAIREY and Mr. F. L. Halford. Mr. Fairey jestingly said that, owing to the fact that he had sat next to two representatives of Northern Ireland, he had been able to steal an epigram. Apparently the thing to do was to indulge sufficiently to maintain equilibrium and yet to retain one's articulation. Referring to Lord Londonderry's remarks that he would like to remain Air Minister for the rest of his life, Mr. Fairey said that their reply to that was "And so say all of us." They now had a Secretary of State who was himself a real pilot, and but for very unfavourable weather, Lord Londonderry would that day have been flying a high-performance machine, a Hawker "Hart." Mr. Fairey once more stressed the good relationship between the A.I.D. and the industry, and the dinner that evening was proof of this, in that after one year of inspection the aircraft constructors were still on the A.I.D. visiting list. Mr. Fairey said that there was a lot of talk about disarmament at the moment, but he was not worried. Obviously, one Government must hold command of the air over its Dominions, and he personally would feel more secure if that Government were the British. He concluded by expressing the appreciation of the industry for the A.I.D., its work and co-operation in producing the best aircraft and engines in the world.

A First Experience

MR. F. L. HALFORD, director of Shell-Mex, said this was his first A.I.D. dinner, and he also thought it was the first time he had been entertained by a Government Department. The experience was a novel one, and was as pleasant as it was novel. He had had considerable dealings with the Treasury, but did not think the Treasury could show an example of hospitality to compare with that of the A.I.D. The relations between his company and the A.I.D. had always been excellent, and it was a privilege to co-operate with that body. He hoped the resources of his company could play a part in some of the problems of the A.I.D.

AIR MARSHAL SIR HUGH DOWDING, Air Member for Supply and Research, said this was the fourth time he had attended an A.I.D. dinner, and they would never have any difficulty in getting him to come. Each time there were changes, and he was surprised to see the increase in the number of people who attended the dinner year by year. In time it looked as if it would have to move into the Albert Hall. In one respect there had been no change during the time he had attended these dinners. On the programme he still saw the name of Mr. Jack Jarvis as organising secretary. Each year the entertainment was better than the year before, and he would ask them to drink the toast of "Mr. Jack Jarvis."

Music was provided during the evening by the Central Band of the Royal Air Force, and entertainments were given by the Western Brothers, Miss Beryl Orde, Mr. Walter Kemp and Mr. Graham Diprose.

BOMBING INSTRUCTION

A brief description of the Vickers-Bygrave Bombing Teacher

BOMBING from the air is a highly complicated art. Everyone must realise by now that it is not merely a matter of taking up a load of bombs in an aeroplane and dropping them when the machine is over the target, but that hyper-sensitive instruments, involved calculations and close co-operation between the bomb aimer and the pilot of the aircraft are necessary. The instruction of a bomb aimer (an awkward but unavoidable title) is a delicate business, and requires, besides bombing with practice bombs from an aircraft, a lengthy course of instruction on the ground.

Probably the most important piece of apparatus designed in recent years for the instruction of bombing personnel is the Vickers-Bygrave Bombing Teacher, an excellent drawing of which, made by Mr. G. H. Davis at the Training Headquarters of No. 601 (County of London) (Bomber) Squadron, accompanies this article.

The Teacher is used for instruction in air navigation and bomb dropping under conditions which give a realistic representation of those experienced while flying. Instruction takes place in a darkened room, the floor of which is whitened. On to this floor is projected an aerial photographic mosaic printed on a transparency 10 inches square. This represents 1,600 sq. miles of country. As the scale of the transparency is about one to 200,000, very fine detail is rendered impossible, but sufficient detail is shown for the recognition of ground marks, and to produce a realistic representation of the ground as seen from a height of 8,000 or 9,000 ft. A platform represents the aircraft from which the "ground" is viewed. Means are provided to cause the image to move towards the platform from various directions simulating the effects of wind on the course of the aircraft. The apparatus will produce the effect of turning in a very realistic manner. In this connection it should be remembered that "flat turns," *i.e.*, turns without bank, are made by bombing aircraft during an action. It is essential to make slow turns without bank when running up to the objective in order that the line of sight is not disturbed by the tilt of the aircraft. In practice, flat turns are made by keeping the wings parallel with the horizon. When, as is often the case, the pilot is in front of the wings, a horizontal wire may be aligned with the horizon.

The platform which represents the aircraft is fitted up with navigation and bomb sighting equipment for the use of the bomb aimer under instruction, and a seat and rudder bar for the pilot. Means of communication such as are normally installed in bombing aircraft are provided.

When the pupil has calculated the direction and force of the wind and has sighted on the target, he throws a switch which represents the bomb release. A device times an interval, equal to the time taken by the bomb to reach the ground, and at the end of this period the movement of the "ground" is stopped. Painted on the floor of the room is a fixed "trail point," which marks the point on which a correctly aimed bomb should drop. Any error may be seen by the difference in the position of the "target" and this fixed trail point.

The Teacher is manufactured by Vickers-Armstrongs, Ltd.

TO AUSTRALIA IN 2½ DAYS?

Colonel Fitzmaurice considers that the London—Melbourne Race should be won at an average of 190 m.p.h.

AFTER a luncheon given in his honour by Mr. John Dulanty, the High Commissioner of the Irish Free State, Col. J. C. Fitzmaurice gave some interesting, if perhaps optimistic, opinions on the MacRobertson race. Melbourne, he thinks, should be reached in sixty hours by the winner of the speed race, and he himself is looking for a single-engined machine capable of cruising at 230 m.p.h. and having a range of 3,000 miles. Although he would naturally prefer to use a British machine, he did not think that the chances of finding a winning machine here were very great, and by the time this appears he should have sailed for America just "to have a look round." Later he proposes to fly by K.L.M. to Batavia to make a study of monsoon conditions.

Many prominent Irishmen were present at the Savoy Hotel last Thursday, but Mr. Joseph McGrath, who is financing the flight on behalf of the Irish Hospitals Trust, was, unfortunately, absent. A letter was read in which he promised that, in the event of a win, the prize money would go to hospital charities in England in case a British machine was used, and would be divided in the event of a foreign machine proving the winner.

Col. Fitzmaurice, in his reply to the High Commissioner, spoke feelingly of aviation and its power for good and evil. It might be a development capable of uniting the peoples together—and even as a fighting Irishman he hoped sincerely for that—or of destroying civilisation utterly. Few people, he said, realised the full capacity of the aeroplane in modern warfare, and that, properly used, it would cause a holocaust against which the destruction of Pompeii would seem child's play. He impressed the importance of racing research and suggested that the modern racing machine would form the basis of a future vehicle for smooth, safe travel over great distances. Aviators were considered to be insane, but they, the aviators, thought that the groundlings were the really insane people.

Among those present at the luncheon were:—Sir Hal Colebatch (Agent-General for Western Australia), Sir Dunbar Plunket Barton, Sir Thomas Molony, Sir John Lavering, Viscount Castlerosse, Senator O. St. J. Gogartry, Capt. Spencer Freeman, and Air Commodore R. Williams, Chief of the Australian Air Staff.

MELBOURNE CENTENARY CELEBRATIONS

No. 203 (F.B.) Squadron to Fly to Australia

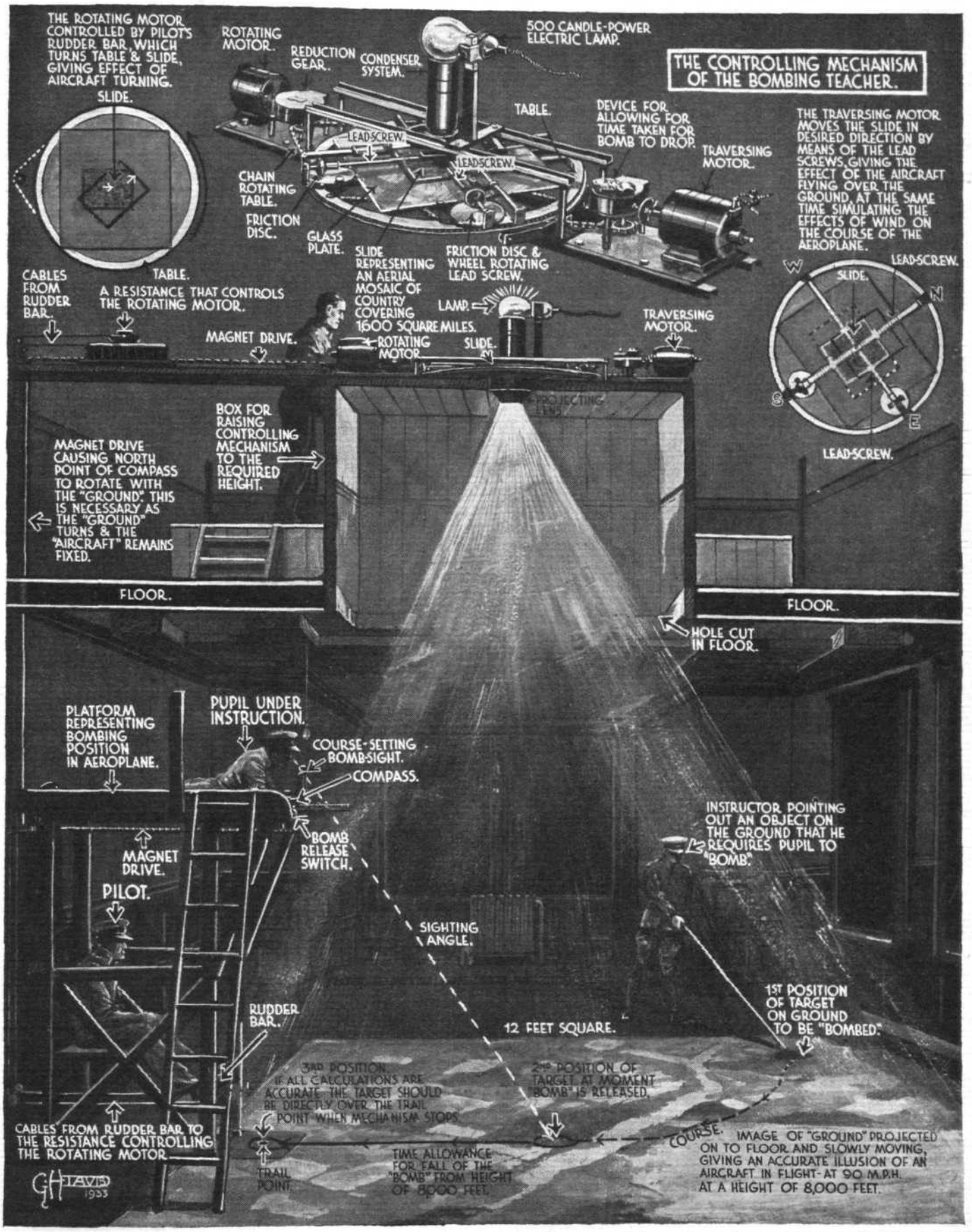
WHEN, next October, the celebrations of the centenary of the State of Victoria and the City of Melbourne are held, the Royal Air Force will be represented by three Short "Rangoon" flying boats of No. 203 (F.B.) Squadron, under the command of Group Capt. R. E. Saul, which is stationed at Basra, Iraq. The machines will have to fly more than 10,000 miles from Basra to Australia, and during their stay in Australian waters they will co-operate in manœuvres with the Royal Australian Air Force and the Navy.

It is probable that the squadron will arrive in Melbourne during the first week in October after flying down the Persian Gulf, round the coast of India to Calcutta, south to Singapore, and via the Netherlands East Indies to Port Darwin. From Port Darwin the probable route will be down the east coast of Australia, with halts at Rockhampton, Brisbane and Sydney.

Only once previously have R.A.F. flying boats flown in formation in Australian waters. This was in 1927-28, when a squadron of Supermarine "Southamptons," engaged on a 28,000-mile cruise, flew down the west coast of Australia and returned by way of the east coast.

No. 203 Squadron is the only R.A.F. unit using the Short "Rangoon," which is really a military version of the "Calcutta." Three-geared Bristol "Jupiters" are fitted. Fully laden the boat weighs more than 10 tons. The economical cruising speed is 93 m.p.h. and the maximum speed attainable is 120 m.p.h. H. F. K.

INDOOR BOMBING



Little explanation is necessary for the above excellent drawing by G. H. Davis—which we reproduce through the courtesy of the "Illustrated London News," since the descriptive wording on the drawing makes it self explanatory, while on the previous page we give a more detailed description of this method of training by means of the Vickers-Bygrave Bombing Teacher

AIRISMS FROM THE FOUR WINDS

Faster—

When the Heinkel H.E.70 is put into service this month, the time for the flight between Berlin and Hamburg will be reduced to fifty minutes.

—and faster

Similarly, the three-engined Junkers Ju. 52/3 m. will reduce the time taken on the routes from Berlin to Paris and to Rome by an hour in each case.

Who's afraid?

Air defence cellars are to be constructed in Berlin on a large scale.

The airport beautiful

An aerodrome was the subject of the design, by Mr. H. G. Cousins, which won the Hawksley prize of the Institution of Civil Engineers for the best and most artistic design of any engineering structure.

New Sikorsky shows its paces

According to a report from America, the Sikorsky S-42 "Transatlantic" flying boat (four Pratt & Whitney "Hornets") attained, during a test flight, a speed of 182 m.p.h.

Soviet gliding record

An instructor at the gliding school in Koktebel, named Shmelev, has created a new Soviet record by remaining in the air for 17 hr. 41 min., beating Anokhin's previous best by nearly two hours.

For peaceful purposes?

Allowance has been made in the Japanese Budget for the addition of eighteen squadrons during the next three years—almost doubling the present strength.

The deaf hear

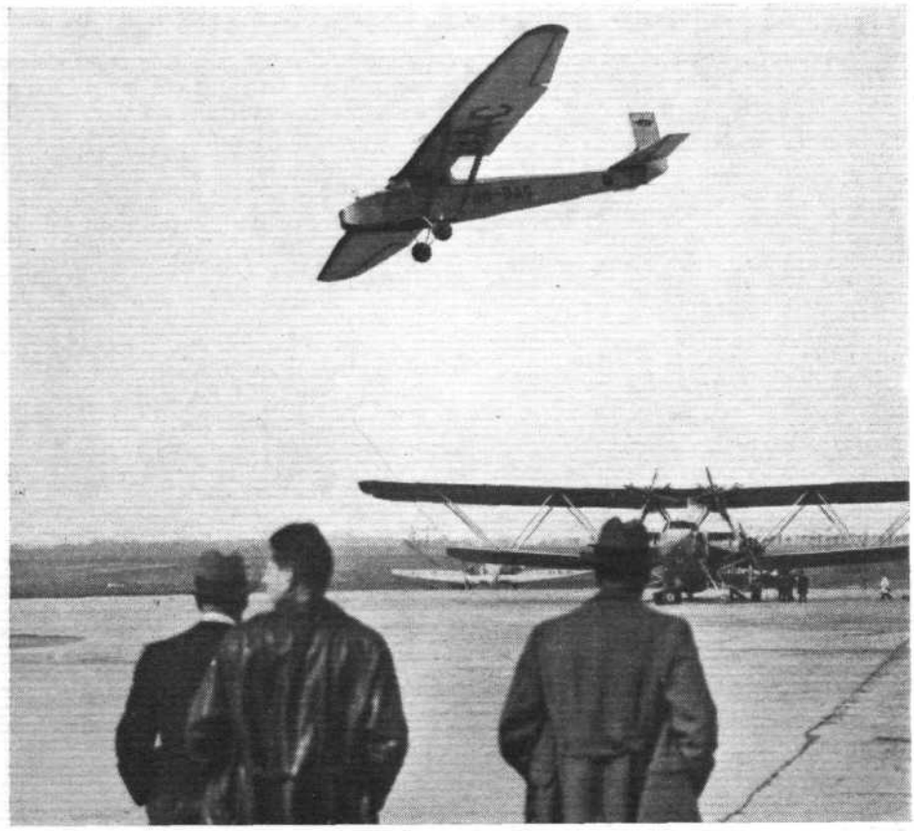
During a visit by the Barnard "Circus" to Patiala, an Indian friend of the Maharajah, who had been deaf for many years, went up with Mr. McKay. On returning to earth he astounded everyone by claiming that his hearing had been restored.

Lockheed for Kingsford-Smith

The decision of Sir Charles Kingsford-Smith to buy a Lockheed "Altair" for the London-Melbourne race, much as it is to be regretted, appeared inevitable under the circumstances. He has left for the United States to supervise the construction of the machine.

Strike epidemic in U.S.A.

Last week it was mentioned that the Consolidated Aircraft Corporation has closed its works following a strike of its workmen. It is now understood that the Curtiss Wright Airplane Corporation is still discussing the question of wages with its employees, and that about 150 workers employed by the Hamilton Standard Propeller Company have gone on strike and are demanding the restoration of the wages which they received in 1929. Following on the heels of these strikes, 400 workers left the Pratt & Whitney Company, and it now seems that, unless a 10 per cent. increase in wages is granted to the employees of the Chance Vought Corporation, they, too, will go on strike.



M. Manchoulas coming in to land at Le Bourget after his flight from Ghent in the Scorpion-engined power glider.

Height record confirmed

The I.A.F. has now officially confirmed the record made by Donati in a Caproni "Pegasus" biplane, on April 11, when he reached a height of 47,350 ft.

B.M.W. financial report

According to the financial report of the Bayerische Motorenwerke A.G. of Munich, the company profits during the past financial year amount to £427,000.

Ware Biggin Hill

Until May 31 target towing practice will be carried out daily in conditions of good visibility over an area between Biggin Hill and Meopham. Pilots are asked not to approach within two miles of the towing aircraft.

Finnish at Heston

Curiosity was aroused last week by the sight of a strange radial-engined biplane carrying Finnish registration letters and "Standard" and "Mobiloil" trade marks flying at Heston. The machine was a Sääski with a Siemens engine of 125 h.p. Besides being used in Finland by private owners, the machine is one of the standard training types of the Finnish Air Force.

Horses by air

Nineteen horses were taken by three-engined Junkers over the mountains from the coast to the races at Wau, New Guinea. Wau is a famous mining town where things are done thoroughly!

Belgian power glider

The machine which recently flew from Ghent to Paris has a maximum speed of 56 m.p.h., and was built under licence from the late Mr. Lowe-Wylde. A Belgian C. of A. has been granted.

New names for old

It is possible that Gatwick may in future be known as "London South Aerodrome" and Gravesend as "London East Aerodrome," and Air Ministry sanction is being sought for the alterations.

The Royal Aero Club

Lord Gorell has been re-elected chairman of the Royal Aero Club for the third year, with Mr. W. Lindsay Everard, M.P., as vice-chairman.

High-speed Italian monoplane

Known as the PL-3, a low-wing cantilever monoplane with wooden wing and chrome molybdenum steel tube fuselage is being constructed by the Cantieri Aeronautici Bergamaschi. The machine, which has been designed by Sig. Pallavicino, will be fitted with a 700-h.p. "Hornet" engine for which the Fiat Company holds the Italian licence from Pratt & Whitney. A retractable undercarriage will be used.

A cry from the depths

From "Old Sailor" comes this poetic gem:—

Amid the perils of the road,
May an Earthbound envy *Flight*?—
There is room in the sky,
'Twould be safer to fly.

Amsterdam to Batavia in five days

Herr Plesman, the K.L.M. chief, is making a personal examination of conditions in India and the Dutch Indies before introducing the new Fokkers which will bring Batavia within five days of Amsterdam.

Empire Air Day

Motorists will be assisted on their way towards the many aerodromes on May 24 by temporary signs which will be arranged by the Automobile Association.

New Fiat engine tested

A Fiat radial engine developed from the well-known A-50 and A-53 types, intended for use in "touring" machines, has completed 150 hours' running at normal speed.

The "Circuit of Europe"

Out of forty-one entries so far received for the "Circuit of Europe," Great Britain is represented by one only, which appears under the name of Mr. MacPherson. The others are made up as follows:—Aero Club von Deutschland—twelve; Aero Club de France—three entered by the Caudron Company, one entered by the Regnier Company, one by the Club Aéronautique, one by M. Girard, and one by M. Finat; Aero Club d'Italia—seven, including one entered by Sig. Ferrarin; Aero Club Republiky Ceskoslovenske—four; and the Aero Club Reczypospolitej Polskie—ten. The contest is being organised by the Aero Club of Poland and during the next few days a special commission will make a survey flight over the course.

The end of "Heart's Content"

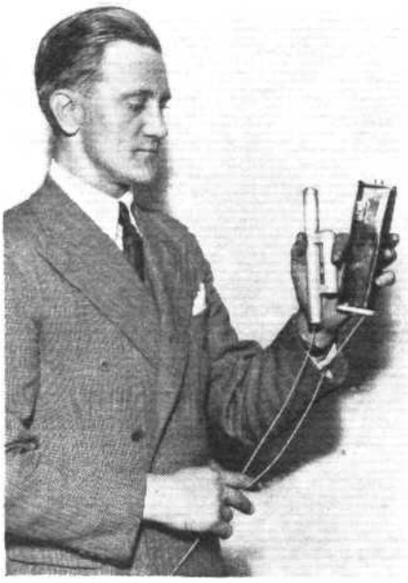
It transpires that Mr. Brooke's crash near Mt. Loziere, on his flight to Australia, was caused neither by petrol shortage, engine failure, nor navigational failure, but that ice formation on the wings of the "Puss Moth" broke up the airflow. After several hours of intermittent blind flying under the most appalling conditions, and with 55 gallons of petrol still on board, the pilot found that aileron control was weakening and that the machine was losing height rapidly. The altimeter was showing 12,000 ft. when the formation was first noticed, and the machine crashed on the crest of a hill. Mr. Brooke noticed afterwards that ice had formed in a considerable ridge both above and below the wing, a little distance behind the leading edge.

A still more "Super Fury"

The modified version of the "Super Fury," which is fitted with the "Goshawk" evaporative-cooled Rolls-Royce engine, was recently tested at Brooklands before being sent to Martlesham. It is rumoured that the new Hawker is even faster than the "Super Fury."

Parachute safety

The question of whether one will or will not remember to pull the rip cord has always been a terrifying one to the groundling, and Mr. John Tranum's latest invention should go a long way towards making people "parachute-minded." In this device the fact that a body always turns over after the leap forms the basis,



Mr. Tranum with his new automatic parachute release.

and a weight sliding in a tube automatically trips a strong spring which, in turn, releases the pilot parachute. The tube is only 14 in. long and weighs 12 ounces. Dummies have been used for tests, which have not yet failed. Mr. Tranum, incidentally, hopes to make a delayed drop experiment this month from a height of 32,000 ft. over Salisbury Plain, during which he will leave his oxygen equipment behind in the machine.

Reliable "Lynxes"

A report from an Italian air transport company pays striking tribute to the reliability of the Siddeley "Lynx" engine. The company operates from Milan several routes over difficult country. These include a line to Rome, on which the aircraft fly over the Apennines, and lines to Munich and Zurich, over the Alps. Six "Lynx"-engined aircraft are employed by the company. It is reported that these machines have flown more than two million kilometres without mishap. No forced landing has been made through engine trouble. In all, the engines have totalled 33,575 hours' running, which is equivalent to 1,343 hours per engine. In that time the aircraft in which they are fitted have transported 20,000 passengers and 350 tons of cargo and mails.

Saigon-Paris

During her recent and second Tokio flight Mlle. Maryse Hilz covered the 6,220 miles between Saigon and Paris in 5 days 11 hours, beating her previous best time by some 37 hours.

German Registration Letters

All German aeroplanes registered recently will carry registration letters instead of the letter "D" followed by numbers. Two Luft Hansa Junkers Ju. 52/3M. machines have visited Croydon with the new form of registration, and the second of these, D-AFER, came in last Tuesday morning.

The Indian earthquake

Aeroplanes proved of inestimable value after the recent Indian earthquake. Rapid reconnaissance of the area enabled the local government to gain an idea of the damage done and to organise relief work without delay. Private individuals chartered machines, and both medicine and urgent letters, too, were carried by air.

Orkney Aerodrome

Two fields in Rousay, one of the Orkney Islands, have been converted into a landing ground, and Highland Airways have passed it out as satisfactory.

Stoke-on-Trent

There is a possibility that, in the near future, Meir aerodrome will be brought under the control of, and developed by, the Stoke-on-Trent City Council, who feel that the aerodrome is not being used as it should be.

Italian flying boat for catapult work

The S.A. Costruzioni Meccaniche Aeronautiche, of Marina di Pisa, has completed the construction of a two-seater reconnaissance flying boat with metal hull and folding wings. The machine, which is known as the Marina-Fiat-4, has been specially designed for operation from catapults. When fitted with a 500-h.p. "Jupiter" engine, at a weight of 2,039 lb., the flying boat has a range of 745 miles, a top speed of 127.4 m.p.h., and a ceiling of 16,400 ft.

Flights to Egypt

The Egyptian Government have provisionally authorised their Consular representatives abroad to issue the necessary permits for flights over Egyptian territory. In the case of such flights from the United Kingdom to Egypt, application should be made direct to the Egyptian Consulate at one or other of the following addresses:—26, South Street, W.1; 28, Brunswick Street, Liverpool; Sunlight House, Quay Street, Manchester. The Automobile Association (Aviation Department) and Royal Aero Club are, it is understood, prepared to act as agents for pilots.

AN ENGLISH WASSERKUPPE?

A National Gliding School to be established at Sutton Bank

IT is possible that the beginning of August a fully fledged "school of soaring flight" will be in action at Sutton Bank, near Thirsk, Yorkshire, and club-house and hangars are to be erected now that the site has, we understand, definitely been obtained.

Although, with the wind in certain directions, Dunstable Downs are admirable for soaring, the Yorkshire site is some 400 feet higher and has both westerly and southerly slopes with a formation that is particularly suitable for soaring as opposed to gliding. Certainly Germany has an unusually good site at the Wasserkuppe, a fact which partly explains the superior results obtained by her soaring experts, and practice is the one thing our pilots have necessarily lacked.

Dual instruction will be possible on real sailplanes when the new school opens.

AIR TRANSPORT & COMMERCE

LONDON TO ROME IN A DAY

New Air Service to the Balearic Islands and Algiers

THE publication of Air-France's summer time-table (commencing on May 1) shows several extremely interesting new services. Perhaps the most outstanding of these is the service from London to Rome in one day. Passengers will leave Croydon Aerodrome at 10 a.m. and be in Rome at 7.30 the same evening, travelling on an accelerated service from London to Marseilles and joining there a new flying-boat service to complete their journey. The following morning they can fly on from Rome to Malta, where they would arrive at 3 p.m., thus bringing this port to within 29 hours from London.

A further new passenger service from London via Marseilles is to Majorca and Algiers. Passengers spend the night in Marseilles and fly across the Mediterranean the following morning in four-engined 18-seater flying boats. This service is expected to have a special appeal to British travellers to the Balearic Islands in the summer. For Prague, Vienna and Central Europe, a new service is being inaugurated, which is claimed to be the most convenient for business people, since they start from London in the evening after office hours, spend the night in Paris, arrive in Prague and Vienna before lunch the following morning, and in Budapest, Belgrade, Warsaw and Bucharest in the afternoon. Fares include hotel accommodation in Paris.

For its overland services, which include five daily departures for Paris and three for Switzerland, Air-France is standardising this year on the improved "Golden Clipper" type of machine. This is a three-engined monoplane seating 10 passengers and carrying two pilots and a steward. The top speed is 175 m.p.h., and the cruising speed 150 m.p.h. It flies from London to Paris in approximately 1½ hours, to Switzerland in 4 hours and to the South of France in 5 hours.

EMPIRE CHAMBERS OF COMMERCE

Imperial Air Communications

PROGRESS in Imperial air communications was reviewed at a meeting of the Executive Committee of the Federation of Chambers of Commerce of the British Empire last week, when Viscount Elibank presided.

It will be recalled that the Thirteenth Triennial Congress of the Federation, at the Guildhall last year, adopted a number of recommendations on this subject; the Congress emphasised the importance of extending, as early as possible, the existing Empire air routes and urged the speeding up of air mails and the reduction of charges. The Federation accordingly welcomes the anticipated extension of the Indian service to Australia, and notes with approval the recent shortening of both the Indian and African air mail schedules by one day.

A report was presented to the Committee by the London Chamber of Commerce of the steps taken on the recommendation of its Civil Aviation Section with a view to bringing about further acceleration of air mail services and the adoption of more attractive charges. The Federation decided to accord to the London Chamber full support in its endeavours.

It was stated that many local authorities had been encouraged to give consideration to the provision of municipal aerodromes as a result of the Airports Conference at the Mansion House last year, organised by the London Chamber in conjunction with the Royal Aeronautical Society, when H.R.H. the Prince of Wales gave an address. The Automobile Association is co-operating with the London Chamber in this matter and has offered to give certain preliminary information to local authorities who are interested and are anxious to have such information.

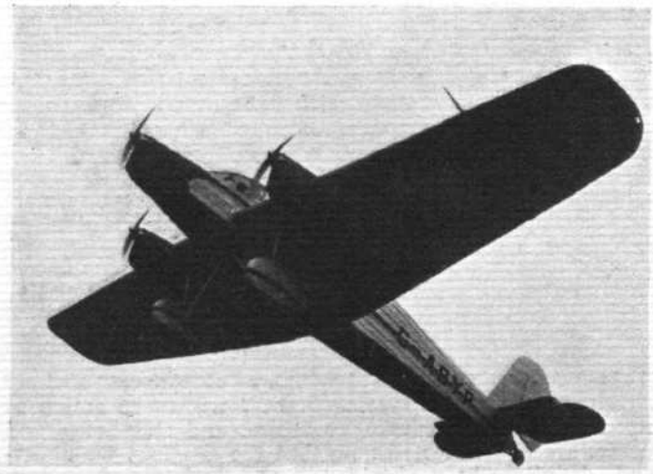
LONDON TO COWES BY AIR

Spartan Air Lines in conjunction with Railway Air Services bring the Isle of Wight within 40 minutes of London.

LAST year Spartan Air Lines operated a very successful air line between London and the Isle of Wight. Their object was not only to provide an air transport section between London and the Isle of Wight, but also to show conclusively that Spartan "Cruisers" were eminently suitable for such work. Now Railway Air Services are working in conjunction with them to extend this service. From May 1 until August 31 four machines will run each way daily, leaving Victoria Station (Airway Terminus) at 8.45 a.m., 11 a.m., 3.30 p.m., and 6.15 p.m., and leaving Cowes (Somerton Aerodrome) at 8.30 a.m., 10.45 a.m., 3.15 p.m. and 6 p.m. The early afternoon service will, however, not start until May 15.

The new arrangement has the advantage for travellers that the holders of return tickets can return, first-class by rail, or by road if they wish, without extra charge. Furthermore they will, in the Isle of Wight, be able to alight either at Ryde or at Cowes, and, if the demand shows this to be necessary, at Bembridge as well. Bookings for the service can be taken not only at London and Cowes but also at a large number of Southern Railway stations.

The seven-passenger Spartan "Cruiser" (three "Gipsy Majors") which are being used on this line are well-known to readers of FLIGHT, and have not been modified for the new service, except that they now carry radio equipment. This enables them to keep in touch with the Control Officer at Croydon, so that he can bring them through bad weather in safety. Passengers are conveyed from Victoria to Croydon aerodrome free of charge, but, somewhat surprisingly, this is not the case between the aerodrome and the town at Ryde or Cowes.



FOR THE NEW SERVICE: The 7-passenger Spartan "Cruiser" (three "Gipsy Majors") used on the London-Cowes air service. (FLIGHT *Photo.*)

PROGRESS AT HOME AND ABROAD

SOUTHERN AND CENTRAL AIR LINES

SOUTHERN AND CENTRAL AIR LINES, LTD., has been formed with a view to operating an air service between Southampton and Hull, via Nottingham. We understand that a monopoly of the route, so far as Southampton is concerned, has been granted by the Southampton authorities. That is to say, no other company will be permitted for twelve months to operate over that particular route. It is intended to link Southampton with London Scottish & Provincial Airways at Nottingham, and with K.L.M. at Hull, but operation will not commence until a few days previous to the opening of the services run by those companies. It is thought that in the early stages three services a day will be run between Southampton and Hull, and the fare for the single journey will probably be about £4, a reduction of 10 per cent. being made on a return ticket. Two "Cheetah" engined Airspeed "Courier" aircraft will be used, with one machine in reserve.

AIR MAILS IN MARCH

THE Postmaster-General announces that during the quarter ended March 31, 52,800 lb. of letter air mails were carried from this country, as compared with 34,300 lb. in the corresponding quarter of 1933, an increase of 54 per cent. The most striking increase took place in the case of the European air services, the carryings in the March quarter, 1934, being 16,400 lb., as compared with 8,200 lb. in the March quarter, 1933, an increase of 100 per cent. The following is a detailed comparison between air mail traffic during the March quarter, 1934, and the corresponding quarter last year:—

	March Quarter, 1933	March Quarter, 1934	Increase
	lb.	lb.	Per cent.
Air Letters			
Indian Air Service (including Egypt, Iraq, etc.)	14,900	22,000	48
African Air Service	5,200	7,700	48
Other extra-European Services ..	6,000	6,700	12
European Services	8,200	16,400	100
Total Air Letters	34,300	52,800	54
Total Air Parcels	27,800	33,700	21
Total Letters and Parcels ..	62,100	86,500	39

It is estimated that about 400,000 more letters were sent from this country during the March quarter of 1934 than during the corresponding quarter of 1933.

"AIRADIO" SERVICE FOR IMPERIAL AIRWAYS

ARRANGEMENTS have been completed by Imperial Airways for the despatch of private wireless messages to and from their aircraft while flying over India, Africa and all, except European, countries on Imperial Airways Empire routes. The service will be known as the "Airadio Service," and came into operation on May 1. "Airadios" can now be despatched from aircraft to wireless telegraph stations between Cairo and Singapore and Cairo and Capetown, for transmission to most parts of the world, and from ordinary telegraph offices to passengers on board Imperial Airways aircraft. In the case of aircraft flying over India, however, the Indian Government will not at present allow private messages to be transmitted to aircraft from their ground stations. "Airadios" may be accepted in code or in clear, excepting in India, where at present only messages in clear are allowed.

A NEW TATA SERVICE ?

A NIGHT air mail service between Bombay and Calcutta has been considered by Tata & Sons. Machines would leave at 9 p.m. in both directions and arrive at 7 a.m. The present train service takes nearly two days.

MADRAS-CALCUTTA SERVICE WITHDRAWN

THE air service between Madras and Calcutta ceased operation on April 1, after running for two months, owing to the lack of support. It is reported that an average of 5 lb. of mail were carried on each trip and one passenger every three trips.

AIRSHIP SHED AT RIO

A CONTRACT for the erection of an airship hangar at Rio de Janeiro, involving a sum of about 3,000,000 Reichsmarks, has been placed by the Condor Syndicate with the Gutehoffnungshütte, a German firm which has its works at Oberhausen.

AIRSHIP CONNECTION BETWEEN HOLLAND AND DUTCH EAST INDIES

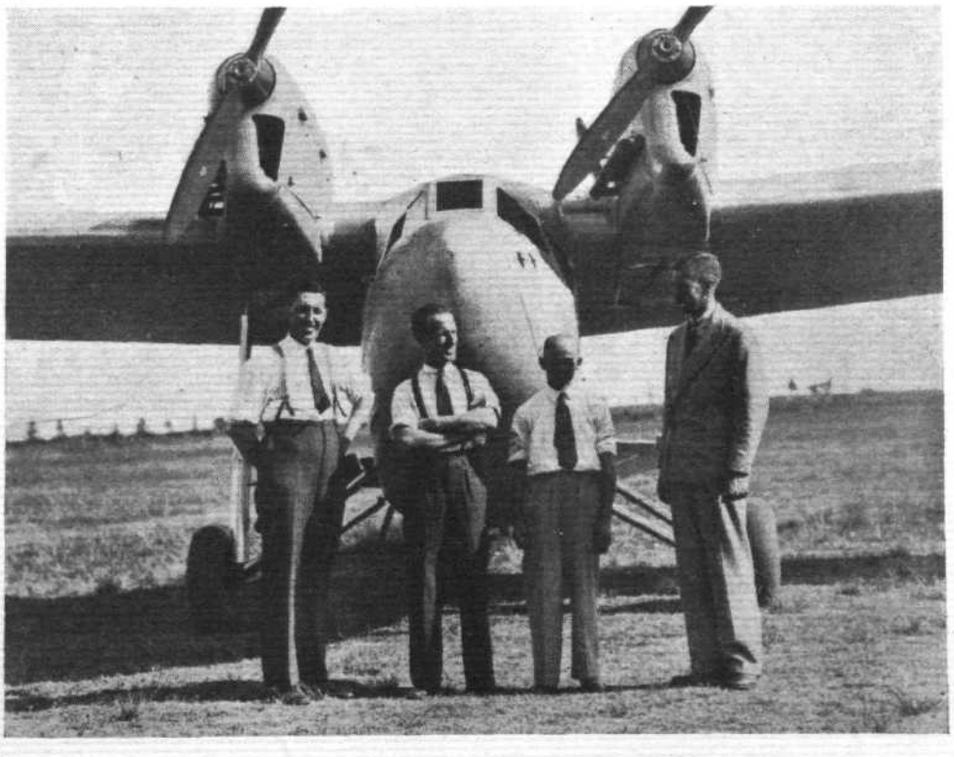
NEGOTIATIONS between the Luftschiffbau Zeppelin G.m.b.H. and Dutch steamship interests relative to the establishment of an airship service between Holland and the Dutch East Indies have been proceeding favourably. The results so far have been so encouraging that it is rumoured in German aviation circles that there is a possibility of the service being inaugurated this year. In this event, the Zeppelin L.Z-129, now nearing completion at Friedrichshafen, would be acquired by Holland, and the construction of another dirigible for Germany started immediately.

K.L.M. SUMMER SERVICES

THE summer time-table of K.L.M. takes effect on May 1. From that date the Amsterdam-Batavia trip will take 7½ instead of 8 days. Jask, in Persia, will be reached in three days instead of five.

ITALIAN SOUTH ATLANTIC CONNECTION ?

IT now seems possible that, in accordance with the programme drawn up at the beginning of the year by Gen. Valle, the Italian Under-Secretary for Air, that an Italian air line may be established between Rome and Santiago, Chile. In view of the well-tried qualities possessed by certain types of Italian flying boats, Italy may become a serious candidate for the South Atlantic service.



ALL-AUSTRALIAN : On March 6 successful first trial flights of Sir Charles Kingsford Smith's Australian-built monoplane, the "Codock" (Napier "Javelin" engines), were carried out at Mascot Aerodrome. Here we see a portion of the "Codock," with (from left to right) Wing Commander Wackett (designer and builder), Sir Charles Kingsford Smith, Sqd. Ldr. (Tiny) White (who will fly the machine to New Zealand), and Mr. M. P. Allsopp (Aviation Representative of the Vacuum Oil Co., Pty., Ltd.). Plume and Mobiloil Aero W. were used during the test flights.

AIRPORT NEWS

CROYDON

THE great event of the week was the delivery of *Scylla* at 3.28 p.m. on Saturday last. This really gigantic machine was delivered by Mr. Lancaster-Parker, of Short Bros., Ltd., with whom Maj. Brackley, Air Superintendent of Imperial Airways, shared the capacious cockpit. Every reader of FLIGHT knows all about the machine, but until you have actually stood in the beautifully appointed cabin, divided into three passenger compartments and a remarkably well fitted steward's pantry, you have no idea what it is like. There is nothing with which to compare *Scylla*, for the interior is very much more spacious than that of a Pullman car. There is ample room for two people to pass each other in the gangway, for example, which will greatly facilitate the serving of meals. We used to compare succeeding types of aeroplane to the luxury road-coach and later, greatly daring, we began to talk of Pullman comfort. All I can say about *Scylla* is that she has anything on the roads or on rails—and for that matter in the air as well—hopelessly beaten by very many lengths so far as passenger comfort is concerned. When you look at this great, impressive aeroplane and take a peep inside the pilot's "office" you realise the futility of remarks about chairmen being airmen. Air line flying becomes more and more a profession and the air line pilot more analogous to the ship's captain every day. Doing aerobatics in a light aeroplane every other day will not help the chairman of a company to understand the problems that beset a pilot flying a machine like *Scylla* to Paris in bad weather, any more than punting on the Thames will help a shipping magnate to qualify to take a liner across the Atlantic.

The German company, D.L.H., now operate their fast Ju. 52 type on the Berlin-London line, and I am informed that the K.L.M. will shortly put the F XX, with retractable undercarriage, on that line also.

Sabena, the Belgian firm, has announced an improvement of the scheduled time between Brussels and London for the near future of no less than half-an-hour. This means doing the journey in an hour and a half, and it must also mean that the new "Caproni" machines ordered by Sabena will soon be seen at Croydon.

On April 24 there was a wedding party at the airport, when Mr. and Mrs. Kenneth Thornton left for Paris by the 6.0 p.m. Air France departure on their honeymoon. Several old stagers at the airport, coming round corners suddenly, recognised in the bride's mother, Miss Zena Dare, of whom doubtless they once possessed a handsome collection of coloured picture postcards. Conscious themselves of retreating hair and advancing years, they found themselves gazing upon a lady possessed apparently of the secret of perpetual youth.

Another interesting passenger by D.L.H. at 10.57 a.m. to Berlin on April 28 was Fraulein Leni Riefenstahl, the famous German film star and personal friend of Herr Hitler. The Italian Under-Secretary for Foreign Affairs travelled by Sabena last week, the Prince of Pless by K.L.M., and Lord Ashfield, president of the London Passenger Transport Board, from Zürich by Imperial Airways in a Westland "Wessex." He came home to undergo an eye operation. Mr. Armstrong left Croydon to fetch Lord Ashfield at 4.45 a.m. on April 25, was nine minutes only on the ground, and was at Croydon again by 6.45 p.m.

Considerable excitement was caused by a small biplane landing at Croydon on the same date. It had markings unknown to most people, and rumour spread that it was from Soviet Russia and was owned by some fabulously wealthy communist. It proved however that OH-IGL was of Finnish origin, and was an aeroplane of Sääski ii type which left us all very little the wiser. The pilots, Messrs. Laurilia and Bernstrom, were, it seems, local representatives of the Vacuum Oil Co., Ltd., in Finland, on a business visit to headquarters.

So great has been the demand for seats on some lines that there has been considerable duplication of services. The K.L.M. late evening service inwards from Holland has been doubled several times during the week.

"Olley Air Service, Ltd.," have continued to book special charter work, and Capt. Olley has only been at Croydon long enough to snatch a cup of tea and a clean collar before setting off again, just lately. On Tuesday last one of his clients, who had booked what he called one of the company's "little ships" for a trip to Southampton, suddenly decided whilst in the air that he would fly to Lisbon. Capt. Olley brought him back to Croydon, left with him again for Paris at 7.0 p.m., and then flew him to Lisbon. Next he flew him back to Paris and dropped him, only to find a cable to go to Baden-Baden and pick up a fresh fare. A direct flight from Baden-Baden to Croydon occupied only 3½ hours, and home once more Capt. Olley found he had been booked for two consecutive trips to Scotland.

A. VIATOR.

HESTON

THE history of transport through the centuries and much of the romance of flying is expressed in a large panel which was hung last week in the entrance hall of the Heston Club building. Aviators and laymen alike will, no doubt, derive lasting pleasure from the study of this great pictorial map, which occupied over a year of the artist's (Miss Phyllis Neville-Peel) time, and which indicates the aerodromes of the world as red dots upon a background of history, progress and achievement by sea, land and air. The panel was presented to Airwork, Ltd., by Mr. Roderick Denman, a director of the company.

Following upon the rapid increase of airline traffic at Heston in the present year, a "control" scheme similar to that operating at Croydon was put into force on May 1. A Notice to Airmen has already been published, but an outline of the proposals is given here. Control will normally be exercised from 10.30 hours until one hour after sunset, and will be signified by a yellow cube, the side of which will measure 2½ feet, displayed on the north side of the northern wireless mast on the top of the control tower. Under these conditions, the area enclosed between the hangars and a line of inset concrete blocks to be sited approximately 50 yards clear of the apron, will be regarded as a neutral zone within which no landings will be permitted. Aircraft will not be allowed to taxi out of this neutral zone on to the landing area when panels showing alternate red and white vertical bars are displayed on the parapet walls of the control tower. In all other cases, aircraft about to depart will taxi to their taking-off point and await the flashing of a white light, directed at them from the control tower, for permission to take off. Aircraft landing will be governed by the ordinary rules of the air.

The Aviation Section of the National Safety First Association (of which the Chairman is Mr. Ivor McClure) is giving an invitation luncheon at Heston on May 10, which will be followed by a demonstration before over one hundred local authorities, including many officials of the police force, of the problems which are likely to confront them in connection with the development of flying. The intention is to show the type of demonstration which could be given by local flying clubs for policemen if chief constables so wish. Such demonstrations would train the police in the distinguishing of safe from dangerous flying as viewed from the ground, and would consequently reduce the risk of pilots being "run in" by the police when engaged in perfectly normal manœuvres near the ground in connection with, say, taking off or landing. This event will not, however, be open to the public, and admission will be by special invitation or by special pass from the National Safety First Association.

OPENING OF DONCASTER AIRPORT

On Saturday, May 26, the Earl of Lonsdale will open the new airport at Doncaster. The opening ceremony will be followed by an inter-club navigation test and air race, and an air display arranged by Sir Alan Cobham, who acted as advisor to the Doncaster Corporation in the selection and development of the site for the airport.

FROM THE CLUBS

HANWORTH

Five new members were enrolled during the week, and the flying time on club aircraft amounted to 41 hours. Lord Sempill took off for Sweden in his "Puss Moth" on Wednesday, after returning from Scotland on the previous evening, and on the following day the Vacuum Oil Co.'s "Dragon" left for Paris.

HATFIELD

The London Aeroplane Club and the R.A.F. Flying Club have flown 62 hr. 50 min. and 21 hr. 45 min. respectively during the past week. One new private owner, Mr. Cook, who has purchased a Comper "Swift," brings the number of machines housed at Hatfield up to twenty-six, including even a "Cutty Sark" amphibian. F/O. E. Fulford has now returned from South Africa, where he has been flying with Sir Malcolm Campbell, and will shortly be recommencing his duties as instructor.

CASTLE BROMWICH

Several cross-country flights have been made during the week from the Midland Aero Club, and on Sunday, April 22, Sywell was visited twice by the new "Majors" in formation. Flying times for the week ending April 26 were 42 hr. 5 min. dual and 20 hr. solo.

BROOKLANDS

The weather has continued to be rather stormy and the week's flying totalled 63 hr. 40 min., 32 hr. 40 min. dual and 31 hr. solo. Flights have been made to Bristol, Sywell, Castle Bromwich, and Broxbourne. Mr. Donald Ross has started a private charter service from Brooklands, and his "Puss Moth" may be hired any time during the day or night at very reasonable prices. Capt. Max Findlay has been doing taxi work for Mr. Fred Darling and Mr. Blagrave, the famous trainers, to Epsom and Lingfield, and the Sales Department has been active.

SUSSEX

Many new members have recently joined the Sussex Aero Club, including one from the Delhi Flying Club, Lt. J. C. Garwood, who should obtain his ticket very shortly. It is hoped that in the near future the club may be able to purchase a "Fox Moth" for taxi work, as there is no machine of such a type within a radius of 40 miles. Four machines from the Hampshire Club succeeded in evading the patrolling member on April 22. Visiting machines included a couple of Percival "Gulls" and Mr. Percival himself gave an interesting display with his "Javelin"-engined model. An aerial garden party will be organised on Empire Air Day at Wilmington.

HAMPSHIRE

Six members soloed at Eastleigh during the week, and three qualified for their licences. Actually 75 hr. 50 min. were flown though fog caused the dawn patrol to Hanworth to be abandoned on April 29.

LINCOLNSHIRE

On Saturday, May 12, members of the Lincolnshire Aero Club are to visit the works of the Blackburn Aeroplane Company, and on the 23rd the Club is holding its annual dinner at the Royal Hotel, Grimsby.

CARDIFF

The week's total of 29 hr. 40 min. solo and dual flying at the Cardiff Aeroplane Club includes a first solo by Mr. C. Cadman, who is only 15 years of age, and who puts in his flying during the holidays.

LIVERPOOL AND DISTRICT

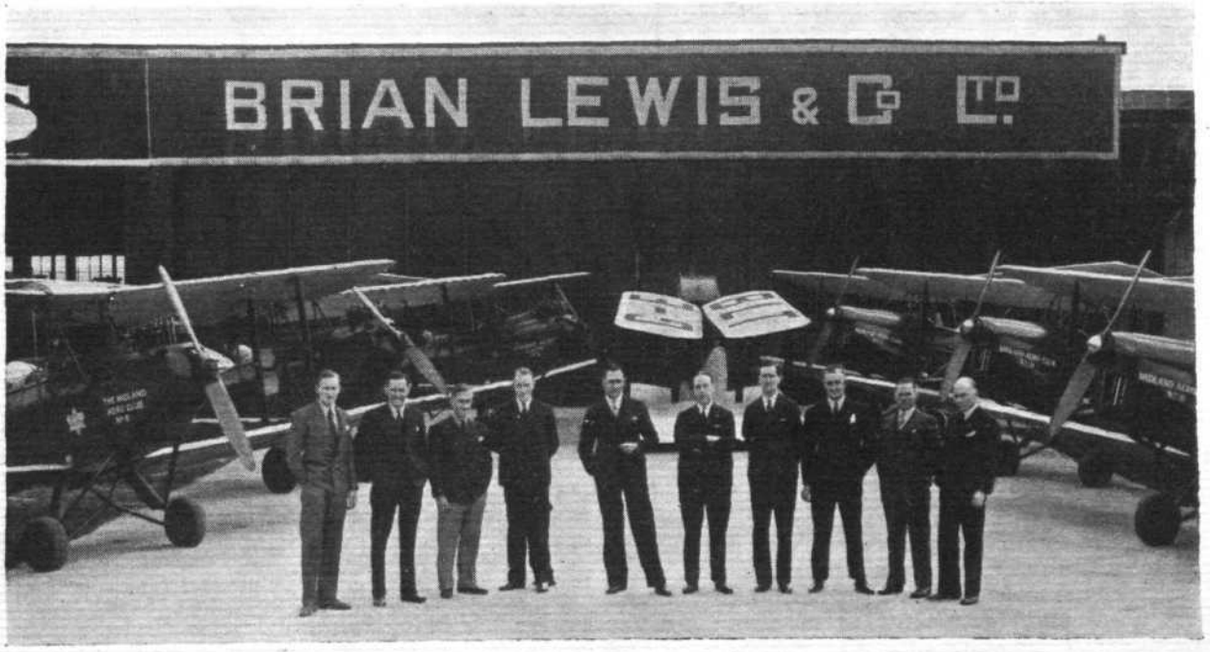
Rain has somewhat curtailed the flying at Hooton during the week and a total of 49 hr. 40 min. has been put in on club machines. During last Saturday and Sunday Mr. Hordern visited the club with a British Pobjoy-Klemm, which several members flew.

NORFOLK AND NORWICH

Now that the evenings are longer the club will soon be organising competitions, and the first will be a "knock-out" landing affair in which the sides will consist of married and single pilots. The loser of each eliminating trial will pay also for his opponent's flying and the winner of each section will meet in a final. M. R. Le Coutre, who obtained his licence last week, will shortly be completing his course by flying to Basle with Mr. J. Collier, the club's instructor.

HERTS AND ESSEX

So great has been the increase in the amount of instructional flying at the Herts and Essex Aeroplane Club that an assistant instructor, F/O. W. E. W. Grieve, has been engaged. Actually 37 hr. dual and 41 hr. solo were flown during the week, and the Chief Ground Engineer now has five pupils under instruction for their G.E. licences. The club has recently been honoured by a visit from Lt. Col. and Mrs. F. C. Shelmerdine, who arrived in the former's "Puss Moth" and surveyed the work on the new clubhouse. The challenge cup presented by Col. Shelmerdine is now on view and the competition will be run off during July. Next Sunday, incidentally, the pin-point competition for the "Wrighton" Challenge Cup will take place. Private owners' machines continue to fill more available lock-ups.



FROM ANCIENT TO ULTRA-MODERN: The Midland Club takes "official" delivery of its new "Moth Majors" and hands over the historic "Cirrus Moths." "LT," with wings folded, is probably the oldest "Moth" in the country.

GATWICK

The B.A.T. School is temporarily operating at Gatwick while the new Redhill aerodrome is under construction, and during the last week some 39 hours were flown with cross-countries to the Isle of Wight and to Amsterdam.

CINQUE PORTS

The expected "Leopard Moth" has now materialised at Lympne and is rarely seen on the ground, while another club machine is being fitted with wing-tip flare equipment. Flying time during the week totalled 22 hr., including a formation to Sywell for the opening tea party, and a first solo. Yesterday the club hoped to welcome Messrs. Rubin and Waller after their return flight from Australia.

SOUTHERN

During the second fortnight in April one member, Mr. Burgess, went solo after only 6½ hours' dual in a Miles "Hawk," and has now obtained his licence. Altogether, 55 hr. were flown in the rather bad weather conditions. Among the visiting machines was Mr. Naish's Airspeed "Courier." The Air Pageant is arranged for May 26 and was *not* held on April 26.

BENGAL

During March the Bengal Flying Club flew a total of 141 hr. 40 min. at Dum Dum Aerodrome, with three first solos and two licences—one a renewal by Mrs. H. D. Cumberbatch. This time includes a matter of 50 min. night flying, both solo and dual, and seven extended cross-country flights, during one of which a club machine was, unfortunately, taxied into a goal post at Midnapore.

WOODFORD

Last week there was a re-union of instructors when Messrs. Cantrill, Stack, and Scholes re-visited the scene of their earlier labours, in the latter's "Leopard Moth." During the week the club did 33 hours' flying, including first solo flights by Mr. Gabriel Toyne, the producer of Manchester's popular Repertory Theatre, and by Mr. A. Chichester. Mrs. Eckersley, the wife of the Captain of the Lancashire County Cricket Team, obtained her "A" licence. A number of members flew down to Wembley last Saturday in spite of bad weather conditions.

CAMBRIDGE

Flying time at Marshall's Flying School for the week ending April 20 totalled 18 hrs. 40 mins. dual and 20 hrs. 20 mins. solo. Two new members joined, and several cross-country and air taxi trips were made during the week. Among visiting machines was a "Gull" piloted by Mr. K. Jopp.

READING

Arrangements for the annual "At Home" are going ahead. The race for the Lord Northesk Cup will be run off, there will be a Concours d'Elegance for visiting machines, a sealed time arrival competition, and a visit from No. 600 (City of London) B Squadron, who will fly over in their "Harts." During the past week the Sutton-harnessed "Moth" has been seen floating about on her back on numerous occasions. Last Sunday afternoon the aerodrome was invaded by a gang of bewhiskered ruffians and an ostensible "speed cop" in an M.G. Midget. It appeared that the local amateur film society were at work and the operations included much clambering about on the wings of a "Hawk," while Mr. Bishop, in the front seat, remained unconscious of the drama being enacted.

SINGAPORE

Seaplane training is very much more dependent on general weather conditions than is imagined by the land-plane club pilot, but a study of the monthly tables of the Singapore Flying Club would hammer the point home. Conditions during 1932 were bad, but those during 1933 were considerably worse. Only 163½ days altogether were fit for instruction and during July, in particular, only 3 days! In all, a total of 1,098 hours were flown on club machines, either the "Moth" seaplanes and the land-plane, or the "Cutty Sark," during the year.

Apart from normal flying, the club has done some useful work, including aerial photography, experimental flying with a Government representative in connection with smuggling, a flight to trace a wrecked ship, and on one occasion club machines acted as targets for volunteer A.A. practice! Formation flying has been continued and has maintained a high standard. There were 218 members at the end of last year.

FLYING POLICEMEN

Aeroplanes are used by the North West Mounted Police now that they have a Chief who flies

SINCE Maj. Gen. J. H. MacBrien was appointed as Commissioner of the Royal Canadian Mounted Police in 1931 the famous force has been using the aeroplane consistently. Its inspectors in the northland use it on their trips, and the latest branch of activity, Customs prevention service, is using the 'plane to combat smugglers and rum-runners on the Atlantic coast. Once it has been used to hunt down a fugitive in the Arctic.

Spreading the gospel of flight is an old story to the chief of the "Mounties." He left the highest position in the Canadian Defence Service to encourage young Canada into the air. He was Chief of Staff for Canada, with the defence of the Dominion in his hands, when he resigned, after spending nearly thirty of his fifty years as an army man. Afterwards he became general manager for a large operator in Eastern Canada and was instrumental in merging a number of lines.

If he had not been a flier he could not have accomplished his task of organising flying clubs. His constant visits by air to clubs in all parts of the Dominion helped "to put aviation across," and when he landed on a club field he himself, and not a professional pilot, stepped out of the pilot's cockpit. Few men nearing the age of fifty will go through the exacting training necessary to qualify for a private pilot's certificate.

THE "HIGH" COMMISSIONER: Maj. Gen. James H. MacBrien, Commissioner of Royal Canadian Mounted Police, who employs aircraft to some considerable extent in his duties.

There is as yet no transcontinental airway across Canada, the Rocky Mountains of British Columbia being one of the last gaps. Traversed through their snowcapped ridges only by two railway lines and a few roads, they hardly represent the most congenial flying country. Commercial planes make the crossing occasionally, but private pilots prefer to stop their jaunts at Calgary, in the foothills of the Rockies. Maj. Gen. MacBrien, flying solo, has twice dared the peaks, which tower upwards of 10,000 ft. above sea level, in his light aeroplane.

Increasing duties and the need for faster transportation has rapidly changed the Royal Canadian Mounted Police from a fully horse-mounted body to one where every modern means of transportation is used, with horses growing less in number each year. Bicycles, motor cycles, automobiles, speed boats, and motor launches have replaced the horse in recent years. And now aeroplanes have been added to the resources of the famous police force by an air-minded chief, so that to-day its members are often referred to as flying policemen.

J. M.

A REUNION DINNER

ON Saturday last No. 45 (War-time) Squadron, R.F.C., held their Eighth Annual Reunion Dinner at the Crown and Cushion Restaurant, London Wall, E.C.2. Maj. A. Crook, M.C., who was the fourth officer to command the Squadron, occupied the chair.

This function is organised each year by Messrs. Bernard Weatherall and H. W. Grimmitt, and is primarily a re-union of the Other Ranks of the old Squadron. As many of the old 45 officers attend as can be present, but many of them are now in different parts of the Empire, and from these messages of good wishes were received. This year the Squadron entertained as its guest Air Vice-Marshal Sir Tom Webb-Bowen, K.C.B., C.M.G., in whose Brigade the Squadron fought for an unbroken period of well over a year in both France and Italy.

After the toast of "The King" had been proposed by the Chairman, that of "Our Guest" was proposed by Capt. Norman Macmillan, M.C., A.F.C., who commanded "A" Flight of 45 Squadron for five months during the war. Capt. Macmillan referred to the way in which the fighting spirit of the Squadron had been maintained by the policy which Brig.-Gen. Webb-Bowen, as he then was, laid down for all Squadrons in his Brigade, which led to the proud record which 45 possesses of having shot down more enemy aeroplanes than any other squadron which was equipped with Sopwith aeroplanes.

The Reply

In his reply Sir Tom Webb-Bowen said that he was glad to be present, and that he realised that 45 had not lost any of its old spirit of *esprit-de-corps*. It was a fine thing, he said, to see this gathering of Other Ranks, organised by themselves, and attended by some of the old officers, go on from year to year, and increasing its numbers as it did so; this year the number present was 67, which was a record, and that was something which very few regimental dinners could point to. The Air Ministry took note of these things, and it had greater repercussions than anyone there really knew. It was one of the very best ways to make our nation air-minded, which none knew better than the members of old 45 Squadron was badly needed. 45 Squadron had a fine record, and he was glad to have been associated with it both during the war and later in Egypt, and he was proud to be present as their guest at dinner.

"No. 45 Squadron" was proposed by Mr. A. T. Bland, and "Absent Friends" by Mr. Arthur Hart. The latter said that very few of the old Squadron were in poor circumstances, but one or two had received help and one or two required it, and he hoped that everyone would give generously to the "stocking" when it was passed round for the fund to assist any member of the old Squadron who might be in need of it during the coming twelve months.

A Gordon-Bell Story

Mr. Grimmitt, one of the organisers of the dinner, gave his annual review of the work. He said that the fund had helped one old member to get a new suit of clothes so that he was presentable to apply for a job, that in another case it had kept the bailiffs out, while in another it had redeemed some pawn tickets. The credit balance was now one shilling and sevenpence, but that didn't matter very much for 45 Squadron had a very good name at the bank. The collection at this dinner would give them enough to carry on with for another year, but even if they were out of funds, ways and means would always be found to help any old member of the Squadron who was in need. He told an amusing story of the late Maj. Gordon-Bell who was at Gosport when the nucleus of 45 Squadron was forming. He, Grimmitt and a friend, Winkworth, were in that nucleus, and so was a sergeant, who he regretted very much never came to any of the dinners! This sergeant always called a parade at 5 a.m., which both Winkworth and Grimmitt felt was quite unnecessary, so they stayed in bed. After a time the sergeant felt he had to do something about it, so he told Winkworth he was for it, and ran him in. Grimmitt was one of the escort as Winkworth was marched in in front of Gordon-Bell with his cap off. Gordon-Bell looked up.

"What's the charge, sergeant?" he asked.

"Absent from parade, sir," replied the sergeant.

"What time was the p-p-parade?" next asked Gordon-Bell.

"Five o'clock, sir!"

"W-w-where was the p-p-prisoner?"

"In bed, sir!"

"I sh-should b-b——y well t-think so!" said Gordon-Bell to the astonishment of the sergeant, and the joy of Grimmitt and Winkworth as the latter was marched out a free man.

After the laughter which followed Mr. Grimmitt's story subsided, the usual smoking concert followed, and concluded a very cheerful evening. N. M.

BRIEFLY

SQD. LDR. J. L. BENNETT-BAGGS has joined the Blackburn Aeroplane & Motor Co., Ltd., of Brough, E. Yorks, as Sales Manager. He flew a B.2 "Trainer" out to Geneva for the Aero Show.

FROM May 1 "Swissair" will be running aeroplanes direct between Geneva and Paris.

VICOMTE DE SIBOUR is now representative, in Paris, of the Standard Oil Co., of New York.

THE PALMER TYRE CO., LTD., has been acquired by British Goodrich Rubber Co., Ltd. Their offices have, therefore, now been moved to Thames House, Millbank.

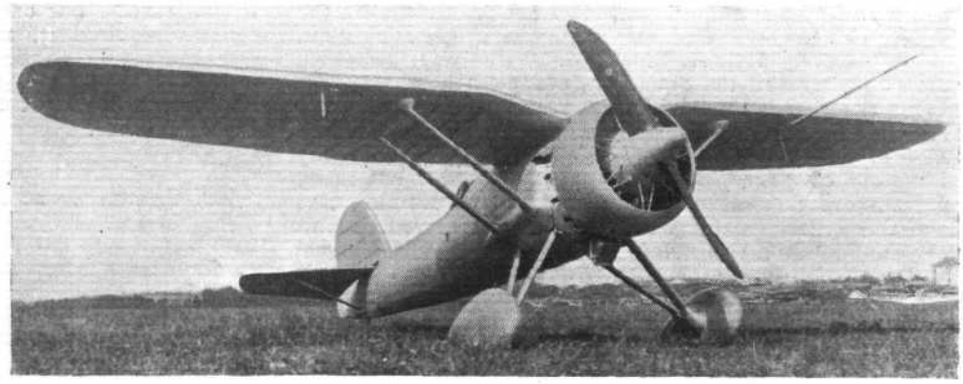
BROWN BROTHERS, LTD., inform us that, as from May 7, deliveries of telegrams to their head offices, Great Eastern Street, will be made from Finsbury Square instead of Bethnal Green as at present. Their telegraphic address will therefore be "Imbrowned, Finsquare, London."

COMPER AIRCRAFT STAFF: (l to r) M. O'Flaherty, Chief Inspector; J. Graham, Works Manager; B. R. S. Jones, Managing Director; Flt. Lt. N. Comper, Technical Director and Chief Designer; G. A. Lingham, Sales Manager, and A. A. Fletcher, Technical Assistant. (FLIGHT *Photo.*)

FOREIGN AIRCRAFT

A POLISH FIGHTER
THE P.Z.L. P.24

The P.Z.L. P.24, with a Gnôme-Rhône 770-h.p. engine, has a top speed of 242 m.p.h.

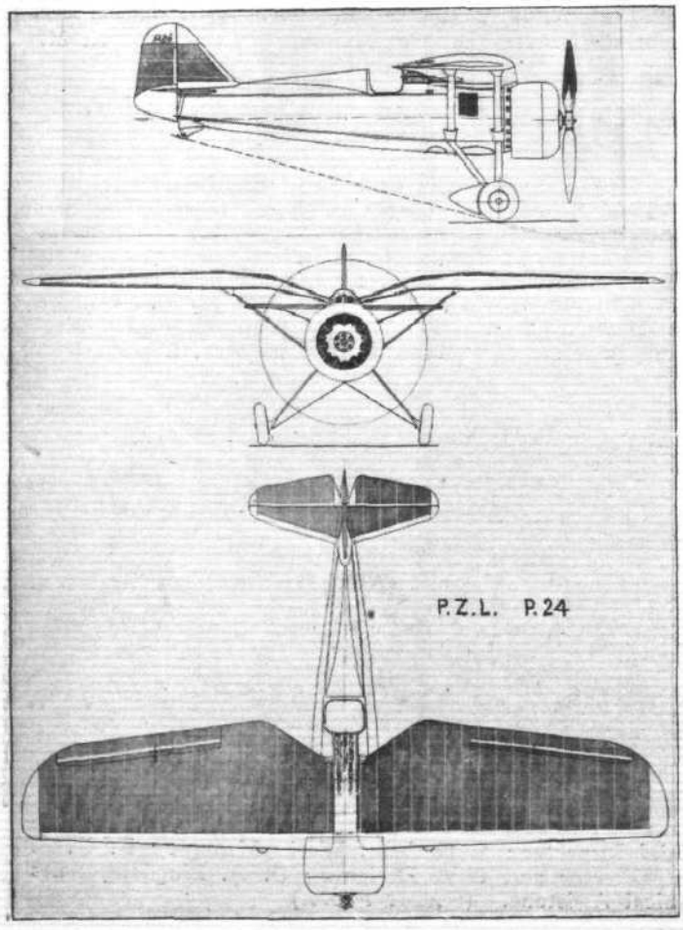


The P.Z.L. P.24 high-wing monoplane (770-h.p. Gnôme-Rhône engine).

FOR the past three or four years the Panstwowe Zaklady Lotnicze (the Polish National Aircraft Establishment) has been producing high-wing monoplane single-seater fighters with "gull" type wings. The better-known types are the P-I (Hispano Suiza), P-VIII (Lorraine "Petrel"), and the P-XI (Bristol "Mercury" or Gnôme-Rhône K.9). One interesting feature of the P.Z.L. series is that the machines fitted with water-cooled engines have a fuselage of rectangular section and for those with air-cooled engines the fuselage is of oval section. In this way minimum drag has been obtained for both types. The wings, on the other hand, are alike for machines in both groups.

Gull-like Wings

The "gull" type wings each have two tapered duralumin spars of double "T" section. Compression struts and ribs are also of duralumin. The portion of duralumin corrugated sheet covering between the spars is rigidly fixed to the ribs and is stressed, thus increasing the strength of the wing. The maximum chord of the wings occurs at about 2/5ths of the distance from the roots to the tips. A cut-out of the trailing edge towards the centre line of the wings, together with the thinning down of the wings some distance from their roots, provides exceptionally good visibility for the pilot. Each wing is braced by a pair of struts without wire cross bracing. Frise ailerons of high aspect ratio are fitted over about half of the span. These ailerons can be lowered simultaneously, when they serve as flaps for decreasing the landing speed.



Fuselage

Duralumin struts of built-up sections are used for the forward portion of the fuselage, which carries two droppable riveted duralumin fuel tanks. Monocoque type construction with duralumin covering is used for the rear portion of the fuselage.

Tail plane, fin, elevator and rudder are all of similar construction and are composed of tubes of C and L section. The engine mounting is a rigid cone of duralumin tubes and plates and is fixed at three points on the front portion of the fuselage.

An undercarriage of the patented P.Z.L. type is fitted. This is built up of high-tensile steel tubes and has P.Z.L. oleo pneumatic shock absorbers. The Dunlop intermediate pressure wheels, using Dunlop pneumatic brakes, are fitted with spats.

The power plant is a Gnôme-Rhône 14 KSd 14-cylinder supercharged radial engine developing 770 h.p. at 13,120 ft. (*4 000 m*) at 2,100 r.p.m. A N.A.C.A. type cowling, the shape of which has been the subject of careful study, encloses the engine.

Armament consists of two Vickers Class E machine guns with 600 rounds of ammunition each. These guns use a P.Z.L. type mechanical synchronising gear. A short-wave receiving set, a transmitter of the standard Polish Air Force type and a signal pistol with 12 cartridges are carried.

Specification

P.Z.L. P.24

Span	34 ft. 8 in. (*10,59 m*).
Length	24 ft. 3 in. (*7,4 m*).
Height	9 ft. (*2,75 m*).
Weight, empty	2,782 lb. 8 oz. (*1 262 kg*).
Fuel .. 70 galls. 315 litres	507 lb. (*230 kg*).
Oil .. 44 pts. 25 litres	48 lb. 8 oz. (*22 kg*).
Pilot with parachute	194 lb. (*88 kg*).
Armament	132 lb. 3 oz. (*60 kg*).
Wireless equipment	55 lb. 1 oz. (*25 kg*).
Electrical equipment	55 lb. 1 oz. (*25 kg*).
Oxygen equipment	15 lb. 6 oz. (*7 kg*).
Wing loading	19 lb./sq. ft. (*93 kg/m2*)
Power loading	4·8 lb./h.p. (*2,18 kg/h.p.*).

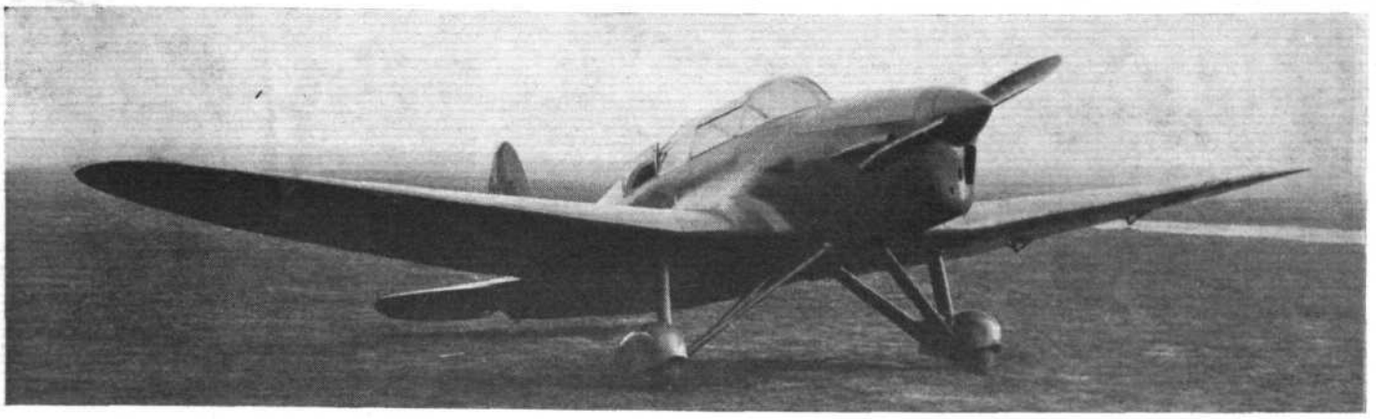
Performance

Climb to 3,280 ft. (*1 000 m*)	1 min. 50 sec.
,, ,, 6,560 ft. (*2 000 m*)	2 min. 30 sec.
,, ,, 9,840 ft. (*3 000 m*)	3 min. 50 sec.
,, ,, 13,120 ft. (*4 000 m*)	4 min. 50 sec.
,, ,, 16,404 ft. (*5 000 m*)	6 min. 15 sec.
Speed at ground level	198·9 m.p.h. (*320 km/hr*).
,, ,, 3,280 ft. (*1 000 m*)	208·2 m.p.h. (*335 km/hr*).
,, ,, 6,560 ft. (*2 000 m*)	217·5 m.p.h. (*350 km/hr*).
,, ,, 9,840 ft. (*3 000 m*)	229·9 m.p.h. (*370 km/hr*).
,, ,, 13,120 ft. (*4 000 m*)	242·4 m.p.h. (*390 km/hr*).
,, ,, 16,404 ft. (*5 000 m*)	233 m.p.h. (*375 km/hr*).
Range at cruising speed	373 miles (*600 km*).

THE MAILLET-NENING MONOPLANE

A fast French three-seater

CONSTRUCTED by M. Maillet and M. Nening, chief pilot and chief engineer respectively of the Roland Garros Aero Club, this recently completed aircraft, known as the M.N., possesses, as the result of very clean aerodynamic design and the installation of a modern type of



THE MAILLET-NENING : The engine is a 6-cyl. Regnier.

inverted engine giving about 200 h.p., quite a remarkable performance.

The Maillet-Nening monoplane is of special interest at the present time, for, as Mr. Percival intends to install a " Gipsy Six " engine in the " Gull," an interesting comparison may be made between the " Gull " with that engine and this new French machine, which has an engine of approximately the same power as the " Gipsy Six." Both machines are three-seater low-wing cabin monoplanes with fixed undercarriage.

The engine fitted is a Regnier six-cylinder inverted air-cooled type, which is virtually a de Havilland " Gipsy III " with two cylinders added. Normal power at 2,150 r.p.m. is 190 h.p. and the maximum power at 2,450 r.p.m. is 220 h.p.

Although it is not yet possible to quote performance figures of the " Gipsy Six " engined " Gull," it is expected that the cruising speed will be fully 160 m.p.h., which is 5 m.p.h. higher than that of the Maillet-Nening. Probably the top speeds will be approximately the same.

At present a conventional type of split undercarriage is fitted to the Maillet-Nening. If a retractable or a cantilever " trousered " version were to be fitted, we do not doubt that the speed would be considerably higher. We recall that when the well-faired but fixed split type undercarriages of certain low-wing " Lockheed " types were abandoned for retractable versions, quite an amazing increase in performance was obtained.

The wing area of the French machine is larger than that of the " Gull," but even so the landing speed seems extraordinarily low for a machine of this type.

We understand that shortly the machine will be flown to Saïgon by M. Maillet and M. Ringel, a pilot of Air-France.

A CAPRONI SINGLE-SEATER FIGHTER

Bristol " Mercury " Engine

OBVIOUSLY developed from the Caproni 113 two-seater advanced training biplane, the Caproni 114 is intended for advanced aerobatic training or for use as a high altitude single-seater fighter. Considering the fact that the machine is fitted with a geared and supercharged Bristol " Mercury " engine, the speed of the aircraft must be considered on the low side. It possesses, however, a reasonably good rate of climb, coupled with good manœuvrability at high altitudes. The machine is a biplane with wings of equal span and chord, rounded at the tips. These are braced by N struts and streamline wires. Welded steel tubular construction is used for the fuselage, the forward portion of which is covered with duralumin sheet and the rear portion with fabric. The elevators and rudder are aerodynamically balanced, and the tail plane is adjustable in flight. A " Mercury IV " S.2 engine, using a special carburetter for inverted flying and cowled by a Townend ring, is fitted. The wing loading is 13.22 lb./sq. ft. (64,6 kg/m²) and the power loading 8.7 lb./h.p. (3,95 kg/h.p.). At sea level the maximum speed is 180 m.p.h. (290 km/hr) and at 16,400 ft. (5 000 m) 157.5 m.p.h. (225 km/hr). The climb to 19,700 ft. (6 000 m) occupies 8 min. 30 sec.

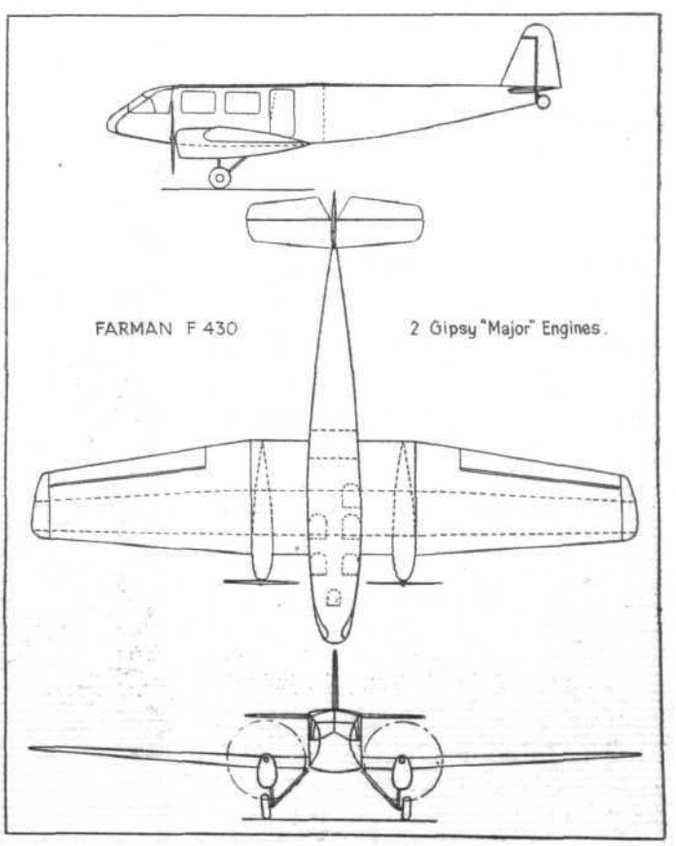
FRENCH REPLY TO THE "DRAGON"

Imitation the sincerest Form of Flattery

AT the Farman Works at Billancourt (Seine) a machine, whose appearance is being eagerly awaited in France, is nearing completion. It is the Farman Company's reply to the "Dragon"—a product of the epidemic of the " Dragonmania " which has existed on the Continent since the production of the de Havilland " Dragon " with its large payload per h.p.—and bears the type number F.430. Test flight should begin within a month. The machine is of wooden construction and is a low-wing cabin monoplane fitted with two de Havilland " Gipsy Major " engines. It is expected that the price will be about £3,560. A second machine of similar type is to be fitted with a retractable undercarriage and two D.H. " Gipsy Six " engines.

FARMAN F. 430
2 " Gipsy Majors "

Span	50 ft. 9 in. (*15,5 m*)
Length	38 ft. 8 in. (*11,8 m*)
Height	9 ft. 2 in. (*2,8 m*)
Wing Area	377 sq. ft. (*35 m²*).
Disposable load	1,102 lb. (*500 kg*)
Gross flying weight	4,520 lb. (*2 050 kg*)
Wing loading	12 lb./sq. ft. (*58,5 kg/m²*)
Power loading	16·75 lb./h.p. (*7·6 kg/h.p.*)
Maximum speed	127·3 m.p.h. (*205 km/hr.*)
Cruising speed	99·4 m.p.h. (*160 km/hr.*)



THE FAIRCHILD CAMERA MACHINE GUN

First details to be published of the Fairchild C.G.16 camera machine gun, which has just been completed. The gun is a development of the earlier types of Fairchild camera guns which are being used by the Air Forces of a dozen nations. Recently the U.S. Naval Air Service adopted the gun as standard

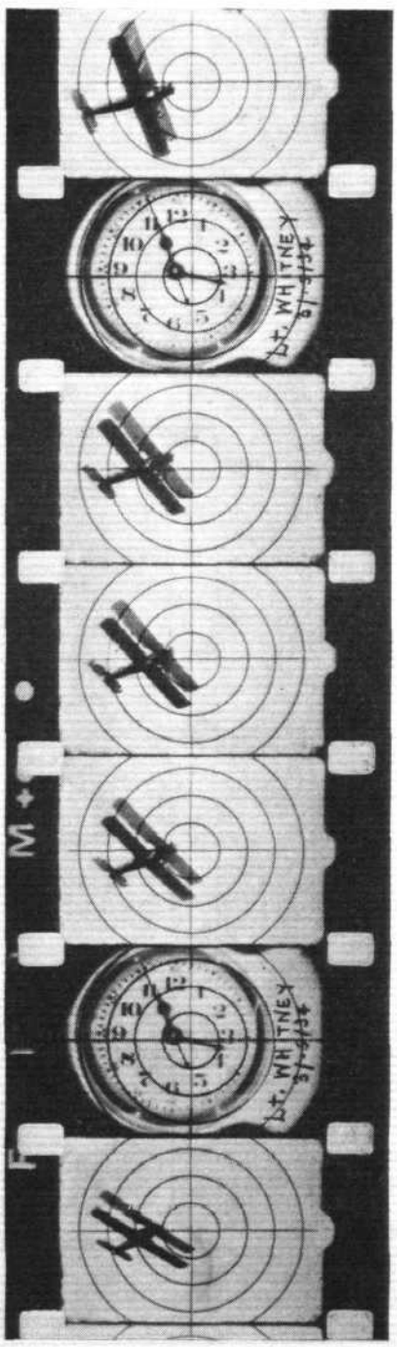
(Left) The Fairchild camera gun installed in the Curtiss "Falcon." (Right) Inserting the film magazine.

AERIAL machine gunnery training under conditions closely resembling those experienced during an actual combat is made considerably easier by the use of a new camera gun manufactured by the Fairchild Aerial Camera Corporation, of 62-10, Woodside Avenue, Woodside, N.Y.

By the use of camera guns, contending aircraft may engage in all manner of combat manœuvres, but where actual machine guns are used for training, firing must be confined to slow and unmanœuvrable sleeve targets towed behind an aircraft, or to stationary targets on the ground. Such training is limited, and for the best results to be obtained, students must be instructed by the use of a camera gun.

To increase the value of camera gun training, the Fairchild C.G.16 gun is of similar appearance to the standard American service machine gun (the Browning), weighs the same, may be mounted on regulation mountings and is operated in the same manner.

The gun is basically a motion-picture camera which "shoots" photographs at the rate of 16 per second so long as the trigger is depressed. For fighting training the guns are attached to standard "flexible" mountings, when they are to be operated by a gunner other than the pilot, and on "fixed" mountings, with remote control from the pilots' control column for "fixed-gun" training. After the "combat," the film is developed and projected, not as a motion picture but one photograph at a time, upon a screen or in a film-viewing device. On each negative a reticle system is automatically superimposed at the time of exposure, so that the effectiveness of the shot may be judged easily and accurately. When the film is projected before the crews of opposing aircraft, or before a class of students, faults can be quickly and accurately indicated, corrective measures pointed out and examples of approved technique presented with maximum effect.



A strip of film showing a "burst of fire" and the watch face and data card. The sequence of the photographs was from bottom to top.

One particularly desirable feature in a camera gun is ease of loading. The majority of guns require the intricate threading of film, which wastes time and effort, and may result in spoiling a considerable length of film. The new Fairchild gun is loaded by merely slipping a small film magazine into a chamber so designed that incorrect insertion is impossible. Thus the loading of the gun is as simple as slipping a clip of cartridges into an automatic pistol. It is claimed that the Fairchild gun is more economical than other designs because it uses a 16-mm. film instead of a 35-mm. film. Additional efficiency is attained by the use of a simple optical system which transmits a larger amount of light than usual and enables the gun to be used over a wider range of light conditions. While most camera guns may be used only during the midday hours, and then only on bright, clear days, the new Fairchild gun may be used in the early morning and late afternoon and on days when other camera guns would be useless.

A simple time-recording system, by which the image of a watch face and identification card is shown on the film, is incorporated in the design. This registers automatically, to the split second, the time of each "burst," and has the added advantage of saving film.

Practically all the moving parts of the gun are concentrated within the camera unit, which may be removed quickly and easily from the gun for inspection and replacement. The gun is sufficiently strong to withstand the shocks experienced during catapult launchings from naval vessels and landings with the aid of arresting devices on the decks of aircraft carriers.

FOG LANDINGS

German Expert explains Difficulties and Remedies

PERHAPS because of the difficulty of translation, the paper presented by Dr. Stüssel to the Royal Aeronautical Society on April 26 was somewhat difficult to follow. The paper was rather a long one, the author did not feel equal to reading it himself, and extracts were read by Mr. A. R. Low, of the Air Ministry. The slides were not very clear, and in the printed paper there was too much repetition.

Fog Take-offs

The first part of the paper was intended as a survey of the present methods of carrying out air transport services in bad visibility. A number of statistics were given, showing the increasing use and reliability of the aids to bad-weather flying. It was pointed out that it was essential that the aeroplane itself must be suitable by being reliable and of good aerodynamic characteristics. One very great difficulty was that of ice formation on the machine, and all the methods evolved to aid the pilot in bad-weather flying were of no avail unless the formation of ice could be prevented. (It may be pointed out that a short note on ice formation and several photographs of ice on different parts of an aeroplane were published in FLIGHT last week.)

For taking off in bad weather it had been found that a very sensitive barometric altimeter was a great help. This was adjusted immediately prior to the take off in conformity with the local air pressure on the aerodrome. For helping the pilot to maintain his *direction* during take-off, the compass and the turn indicator were used, supplemented by coloured parallel lines painted on the actual aerodrome surface, or lines of coloured lamps.

Landing in Fog

On the subject of fog landings, a much more difficult task than taking off, Dr. Stüssel's paper had much to say, without, however, going into great detail. When the ground itself was obscured by fog, the landing was made by what is known as the "ZZ" system, in which the machine is guided to the vicinity of the aerodrome by wireless, the pilot then told to approach along some specified "corridor" of which each main aerodrome will have one or more, and his compass course is checked every minute or so from the ground. When the aeroplane has in this manner been guided to the boundaries of the aerodrome, losing height all the time, it finally receives the signal to land. This signal is given by the Morse letters "ZZ."

The Discussion

MR. H. E. WIMPERIS, Director of Scientific Research, who was in the chair, asked Mr. Capon, Chairman of the particular Panel of the Aeronautical Research Committee responsible for studying flying in bad visibility, to open the discussion. (Mr. Capon is also Superintendent of Scientific Research at the Royal Aircraft Establishment, Farnborough.—ED.)

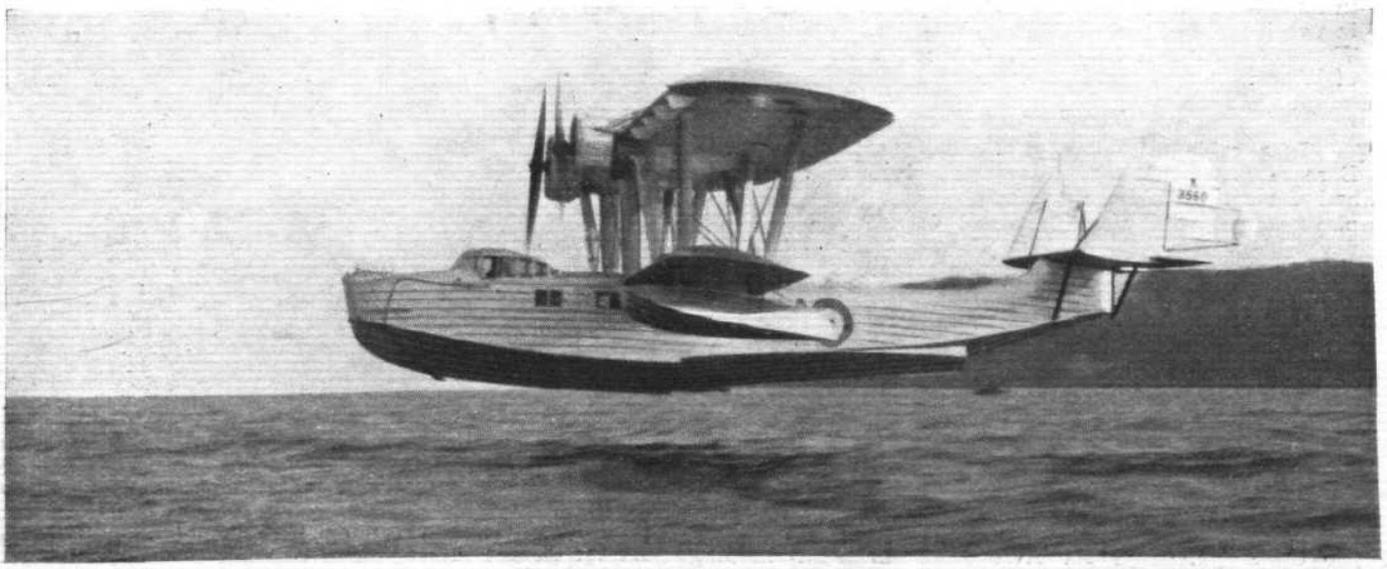
MR. CAPON recalled the method initiated in this country by Prof. Lindeman for landing in fog. This consisted in mooring two kite balloons above the fog layer, the projection of the line joining the two balloons pointing to the aerodrome. The balloon nearest the aerodrome was slightly lower than the other, so that the aeroplane was given not only the horizontal direction but also the slope towards the aerodrome. The actual landing was then done by means of the warning device geared to the control column originated at the R.A.E. On the whole, good results had been obtained with the Lindeman method. Errors might amount to something like 150 yards on a bumpy day, which was not considered excessive for a fairly large aerodrome. Later on one of the balloons was dispensed with, the remaining one being so placed that from it the pilot could glide on a given compass course to the aerodrome. Lately the kite balloon had been supplanted by two radio beacons, one sending out vertical beams and the other horizontal.

CAPT. WALTERS, of Imperial Airways, said that Imperial pilots had used the "ZZ" system with good results. He expressed the hope that whatever system were introduced and adopted in the future would be standardised, so that pilots did not have one system at one aerodrome and another at the next aerodrome.

Ice Formation

MAJ. MAYO expressed the appreciation of Imperial Airways for the work done by the Luft Hansa in developing fog-landing methods. He referred, as did the article in FLIGHT last week, to the curious fact that it was not until this winter that British machines had suffered severely from ice formation. Then there had been quite an epidemic of it. He would like to know if the D.L.H. had any meteorological information which would forecast the likelihood of a machine meeting weather conditions likely to be favourable for the formation of ice. He also thought that some classes of aircraft were more liable to ice formation than others. For example, biplanes had been found to give little trouble, while thick-wing monoplanes seemed more liable to collect ice. He also asked if the D.L.H. had investigated the possibility of marking obstructions by some form of signalling apparatus which would warn the pilot that he was approaching an obstruction.

MR. BRAMSON suggested using the angle of incidence as a datum in determining the angle of glide when approaching an aerodrome in fog. He pointed out that this was a better basis than gliding speed because, for a given aircraft, the gliding angle did not alter with wing loading, but the gliding speed did. He asked for information relative to electrostatic means for preventing ice formation. One imagines that what he was thinking of was an application of the latest methods of dust collection by electrostatic means.



FOR OPEN SEA RECONNAISSANCE : The SARO A.27 flying boat is fitted with two Bristol "Pegasus" engines.

CORRESPONDENCE

The Editor does not hold himself responsible for opinions expressed by correspondents. The names and addresses of the writers, not necessarily for publication, must in all cases accompany letters intended for insertion in these columns.

TOWNEND RING MODEL

[2921] In your issue of April 19 is described and illustrated a working model of the Townend Ring at the Science Museum, and I should like to point out an error, lest any of your readers may be puzzled or misled.

It is stated that the forward motion of the ring " demonstrates that the forward force on the ring is considerably greater than the increased resistance caused by the presence of the ring." It cannot, of course, prove that, as the nacelle is fixed rigidly ; it only shows that there *is* a forward force on the *ring*.

Edgware. W. E. GRAY.
April 30, 1934.

AIRMEN OR CHAIRMEN ?

[2922] Would you kindly publish that my remarks on the Royal Aeronautical Society that we required airmen and not chairmen to control our flying activities were not intended to apply especially to " chairmen " as such.

The truth is that British aviation is controlled more than in any other country by men who sit in chairs and whose knowledge is consequently chair rather than air knowledge, or in other words, theoretical rather than practical. These men are ignorant as to the state of ignorance from which they act.

If British aviation is to march with aviation in other countries, more scope must be given to men who out of their own experience have studied the problems with which aviation is faced.

It was not intended for a moment that the ability to fly necessarily connoted ability to administer and direct, but that there was every reason why the two should be combined. Capacity to fly and to desire to learn by flying goes with the true spirit of initiative and enterprise. Surely these are desirable qualities in the controllers of a new human activity.

I can only say that other leading nations have apparently a sufficient supply of the type of individual I advocate to fill key positions in aviation.

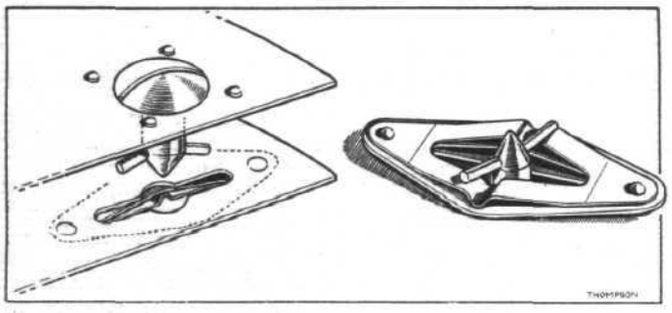
PEREGRINE F. M. FELLOWES,
Air Commodore (Retired).

The Priory,
Lamberhurst, Kent.
April 28, 1934.

THE INDUSTRY

A New Cowling Clip

THERE are endless uses for a light and positive clip of the type usually called a cowling clip in aircraft, and many of these make their appearance on the market from time to time. A particularly neat one is that being used on the new Comper " Streak " and also by Short Bros., Spartan Aircraft, Westlands, Airspeeds, and other aircraft manufacturers. This is called the Thompson cowling clip and, as can be seen from our sketch, it is extremely simple in its action, besides being light and positive. It is made in two lengths of pin, 0.35 in. and 0.5 in., by Boothby & Thompson, Aircraft Engineers, 4, Wood Vale, Cowes, Isle of Wight.



Boothby and Thompson's new cowling clip.

The Barnard Tour

IN a cable to Messrs. C. C. Wakefield, Capt. C. D. Barnard states that his India Air Pageants tour of North and Central India has been completed. Ninety-two displays were given, often in places where aeroplanes had never been seen before. Capt. Barnard paid a tribute to the excellent Wakefield organisation in India.

Avros for Free State Army

THE Irish Free State Department of Defence have recently purchased four new Avros for advanced training purposes by the Army Air Corps. Two have already been delivered at Baldonnel aerodrome, County Dublin, and the others were expected to arrive during the present week. The machines will be used for instruction in aerial gunnery, photography, reconnaissance, and light bombing. Considerable secrecy was maintained about the order, but it will be recalled that about two years ago the Free State Air Corps purchased six Avro " Cadets " for training purposes.

British Engines Abroad

THE Avio Linee Italiane S.A., of Milan, operates air lines over several difficult routes, surmounting both the Apennines and the Alps, and a record of one and a-quarter million miles flying without an incident of any kind is something to be proud of. Each machine used by the company is fitted with Siddeley " Lynx " engines, which have totalled 33,575 hours, or 1,343 hours per engine. Siddeley engines, incidentally, are in satisfactory use on the new line between Seville and Las Palmas (Canary Islands). From another source it is learnt that the German Government has placed an order with Armstrong-Siddeley Motors, Ltd., for 80 aero engines.

Aluminium in Industry

WITH the above title, a booklet, which we have received from The British Aluminium Co., Ltd., of Adelaide House, King William Street, E.C.4, gives examples of the uses of aluminium in cars and transport vehicles, aircraft, electrical apparatus, boats, rolling stock, textile machinery, architecture, cooking utensils, foils and dairying apparatus.

SKYBIRDS : The above photograph shows Capt. Hubert S. Broad presenting the Runner-Up Cup to the Squadron Leader of Club 100, of Westcliff-on-Sea. It is interesting to note that this district has as many as five separate Clubs. If this is any indication of the trend of air-mindedness, Southend and district should do well in the not far distant future, where aviation is concerned. The Challenge Cup was won by 98 Club.

THE ROYAL AIR FORCE

London Gazette, April 24, 1934.

General Duties Branch

The follg. are granted permanent commissions as Pilot Officers with effect from April 3, and with seny. of the dates stated :—J. G. Davis (Oct. 3, 1932) ; E. Shipley (April 3, 1933).

The follg. Pilot Officers on probation are confirmed in rank (April 10) :—E. S. Butler, F. D. Terdrey.

Flying Officer B. P. Reynolds takes rank and precedence as if his appointment as Flying Officer bore date March 27, 1932. Reduction takes effect from Feb. 27. Group Capt. R. J. Bone, C.B., C.B.E., D.S.O. is placed on the retired list at his own request April 15) ; Flying Officer E. Poole is transferred to the Reserve, Class A (April 14) ; Flying Officer L. F. H. Orr is transferred to the Reserve, Class C (April 20) ; Lt. H. C. N. Rolfe, R.N., Flying Officer, R.A.F., relinquishes his temporary commission on return to Naval duty (April 23).

Medical Branch

V. D'A. Blackburn, M.B., Ch.B., is granted a short service commission in the rank of Flying Officer for three years on the active list with effect from and with seny. of Feb. 2 ; J. A. Crockett, M.B., B.Ch., is granted a short service commission in the rank of Flying Officer for three years on the active list with effect from April 9, 1934, and with seny., April 9, 1933.

The follg. Flight Lts. are promoted to the rank of Squadron Ldr. :—F. P. Schofield, M.B., B.S., M.R.C.S., L.R.C.P., D.M.R.E. (March 15) ; G. J. Hanly, M.B., Ch.B., F.R.C.S.(E.) (April 23).

The follg. Flying Officers are promoted to the rank of Flight Lt. :—H. J. Melville, M.B., Ch.B., J. L. Walsh, M.B., B.S. (April 18) ; A. H. Osmond, M.R.C.S., L.R.C.P. (April 19).

Flight Lt. M. J. Cahalane, M.B., Ch.B., relinquishes his temporary commission on completion of duty (April 3) ; Flight Lt. (Honorary Squadron Ldr.) E. E. Isaac, M.C., M.R.C.S., L.R.C.P., relinquishes his temporary commission on completion of service (April 4).

Dental Branch

W. V. A. Denney, L.D.S., is granted a non-permanent commission in the rank of Flying Officer with effect from and with seny. of April 9 ; Flying Office J. E. Willoughby, L.D.S., is promoted to the rank of Flight Lt. (April 18).

Memorandum

The permission granted to Capt. W. F. N. Forrest, D.F.C., to retain his rank is withdrawn on his conviction by the civil power (Jan. 26).

ROYAL AIR FORCE RESERVE
RESERVE OF AIR FORCE OFFICERS

General Duties Branch

The follg. are granted commissions as Pilot Officers on probation in class AA(i) (April 24) :—A. J. Edmunds, P. J. Field-Richards, C. R. S. Hayne, C. F. Hughesdon, H. R. Kirkman, W. M. Morris, H. R. Wheeler.

R. H. Stainforth, O.B.E., is granted a commission as Flying Officer (Hon. Flight Lt.) in class C (March 27) ; Flying Officer on probation F. T. Digby, D.S.O., D.S.C., is confirmed in rank (July 1, 1933) ; Pilot Officer on probation C. C. J. Barritt is confirmed in rank (March 22).

The follg. Flying Officers are transferred from class A to class C :—T. B. Fenwick (Dec. 20, 1933) ; A. C. Lamb (April 13) ; P. G. Clarabut (April 20).

Pilot Officer C. F. Almond is transferred from class AA (i) to class C (Oct. 27, 1933) ; Pilot Officer on probation P. B. Powell is transferred from class AA (ii) to class C (Nov. 25, 1933) ; Flight Lt. E. L. Drew relinquishes his commission on completion of service (Nov. 30, 1933) ; Flying Officer H. L. Christie relinquishes his commission on completion of service and is permitted to retain his rank (March 1) ; Flying Officer P. Du Cane relinquishes his commission on completion of service (April 12) ; Pilot Officer on probation P. H. R. Saunders relinquishes his commission on appointment to a short service commission in the Royal Air Force (March 16). (Substituted for the notification in the *Gazette* of April 3). Flying Officer E. Shipley relinquishes his commission on appointment to a permanent commission in the Royal Air Force (April 3) ; Pilot Officer on probation J. G. Davis relinquishes his commission on appointment to a permanent commission in the Royal Air Force (April 3).

SPECIAL RESERVE

General Duties Branch

The follg. are granted commissions as Pilot Officers on probation (March 30) —A. P. Anderson, H. F. Remnant.

Pilot Officer R. F. G. Lea is promoted to the rank of Flying Officer (Feb. 27).

AUXILIARY AIR FORCE

General Duties Branch

No. 601 (County of London) (Bomber) Squadron.—J. G. Grace is granted a commission as Pilot Officer (March 21).

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified :—

General Duties Branch

Air Commodore C. D. Breese, C.B., A.F.C., to No. 23 Group Headquarters, Grantham, 16.4.34. To command vice Air Cdre. H. R. Nicholl, C.B.E.

Group Captain O. T. Boyd, O.B.E., M.C., A.F.C., to Headquarters, Fighting Area, Uxbridge, 16.4.34. On appointment as Senior Air Staff Officer vice G/Capt. H. J. F. Hunter, M.C.

Squadron Leaders : E. I. Bussell to No. 40 (B) Squadron, Abingdon, 15.4.34. To command vice S/Ldr. M. L. Taylor, A.F.C. J. L. M. de C. Hughes-Chamberlain to No. 503 (County of Lincoln) (B) Squadron, Waddington, 15.4.34. For flying duties vice S/Ldr. S. S. Benson, A.F.C. C. J. S. Dearlove to No. 31 (A.C.) Squadron, Quetta, India, 22.3.34. To Command vice S/Ldr. B. Ankers, D.C.M.

Flight Lieutenants : C. J. Collingwood, D.F.C., to No. 5 (A.C.) Squadron, Quetta, India, 9.3.34. R. L. Edward, to No. 28 (A.C.) Squadron, Ambala, India, 12.3.34. F. H. Isaac, D.F.C., to No. 27 (B) Squadron, Kohat, India, 19.3.34. G. R. O'Sullivan, to No. 2 (Indian Wing) Station, Risalpur, India, 2.3.34. W. H. Poole, A.F.C., M.M., to Royal Air Force Depot, Middle East, Aboukir, 27.3.34. R. H. Haworth-Booth to No. 3 Flying Training School, Grantham, 14.4.34. E. C. Barlow to No. 45 (B) Squadron, Helwan, Middle East, 14.4.34. L. V. Bennett to No. 2 Armoured Car Company, Ramleh, Palestine, 14.4.34. C. B. Greet to No. 36 (T.B.) Squadron, Singapore, 13.2.34. L. S. Snaith, A.F.C., to No. 70 (B.T.) Squadron, Hinaidi, Iraq, 14.4.34. R. A. B. Stone to No. 14 (B) Squadron, Amman, Palestine, 14.4.34.

Flying Officers : W. Halmshaw, to No. 210 (F.B.) Squadron, Pembroke Dock, 19.3.34. J. Ramsden to No. 24 (Communications) Squadron, Hendon, 14.4.34. W. J. Brighty to No. 20 (A.C.) Squadron, Peshawar, India, 1.4.34. R. Cleland to No. 4 Flying Training School, Abu Sueir, Egypt, 14.4.34. H. M. Russell to No. 202 (F.B.) Squadron, Malta, 14.4.34. D. Addenbrooke to No. 11 (B) Squadron, Risalpur, India, 1.4.34. M. W. L'I. L. V. Baker to No. 28 (A.C.) Squadron, Ambala, India, 1.4.34. E. C. Passmore to H.M.S. *Furious*, 23.4.34. N. C. S. Rutter to No. 60 (B) Squadron, Kohat, India, 1.4.34. W. P. J. Thomson to No. 3 Armament Training Camp, Sutton Bridge, 17.4.34. E. B. Waddy to No. 5 (A.C.) Squadron, Quetta, India, 1.4.34.

Pilot Officers : J. O. Carter to No. 3 Armament Training Camp, Sutton Bridge, 17.4.34. C. M. B. Renshaw to No. 16 (A.C.) Squadron, Old Sarum, 16.4.34. P. W. Bale to No. 202 (F.B.) Squadron, Malta, 14.4.34. T. L. Moseley to No. 202 (F.B.) Squadron, Malta, 14.4.34.

Acting Pilot Officers : The following Acting Pilot Officers are Posted to No. 4 Flying Training School, Abu Sueir, Egypt, on 14.4.34 :—G. L. Cruickshanks, M. H. de L. Everest, C. N. Fleming, D. P. Frost, M. Hallam, D. B. Harrison, J. W. Hathorn, G. A. Kitching, A. A. McMath, E. K. Piercy, S. G. Pritchard, J. D. T. Revell, G. A. Richmond, R. E. Sharp, D. C. Torrens. J. R. Leggate to No. 5 Flying Training School, Sealand, 12.4.34.

Stores Branch

Flight Lieutenant F. C. C. B. Hichens to No. 47 (B) Squadron, Khartoum, Egypt, 7.4.34.

Flying Officers E. G. Northway, M.B.E., to Air Armament School, Eastchurch, 14.4.34. R. N. Heskerh to No. 4 Flying Training School, Abu Sueir, Egypt, 14.4.34. H. D. Jackman to R.A.F. Depot, Middle East, Aboukir, Egypt, 14.4.34. R. W. Wallace to No. 1 Stores Depot, Kidbrooke, 19.4.34.

Accountant Branch

Flight Lieutenant W. J. Heneghan to R.A.F. Base, Malta, 14.4.34.

Medical Branch

Squadron Leader V. R. Smith to No. 5 Flying Training School, Sealand, 19.4.34. For duty as Medical Officer.

Flight Lieutenant J. Parry-Evans to R.A.F. Depot, Uxbridge, 20.4.34. For duty as Medical Officer.

Flying Officer J. A. Crockett, to Medical Training Depot, Halton, 9.4.34. On appointment to a Short Service Commission.

NOMENCLATURE OF AEROPLANE—VALENTIA

The official name of the Vickers bomber transport aeroplane, with Pegasus engines, strut-braced undercarriage, wheel brakes and tail wheel, is Valentia. This aeroplane must not be confused with the Victoria VI, which, though it has Pegasus engines, has a wire-braced undercarriage and a tail skid.

ROYAL AIR FORCE BENEVOLENT FUND

From the Annual Report for 1933, it is seen that for the first time in the history of the Fund that expenditure has overtaken income. Unlike other Service Funds, the R.A.F. Benevolent Fund cannot expect the return of more prosperous times to bring a proportionate reduction in expenditure, for the reason that it exists for the Fighting Service on which a call is made in peace as well as war, and added to ordinary distress are those cases resulting from Air Casualties which are cumulative. It is the aim of the Council to combine relief on a generous scale with the building up of assured income from investments to as to relieve the Fund of its dependence upon sources which may dry up when most needed. Under present conditions it is impossible to pursue this policy, and it has even become necessary to reduce grants.

Assured income must be increased by an amount estimated at nearly £6,000 per annum, and the Council earnestly hope that ready support will be forthcoming in this hour of need.

ROYAL AIR FORCE. RE-EQUIPMENT OF UNITS

The following re-equipment of Units has recently taken place :—

No. 99	Squadron	.. Heyford replaced Hinaidi.
,, 209	,,	.. Perth replaced Iris.
,, 504	,,	.. Wallace replaced Horsley.
,, 602	,,	.. Hart replaced Wapiti.
,, 603	,,	.. Hart replaced Wapiti.
,, 812	,,	.. Baffin replaced Ripon.
Air Armament	School	.. 4 Harts replaced 4 Wapitis.

The following Units are expected to complete or commence re-equipment during the next few months :

No. 8	Squadron	.. Vincent to replace III F.G.P.
,, 24	,,	.. Osprey to replace III F.G.P.
,, 30	,,	.. Hardy to replace Wapiti.
,, 41	,,	.. Demon to replace Bulldog.
,, 84	,,	.. Vincent to replace Wapiti.
,, 801	,,	.. Osprey to replace Flycatcher.
,, 810	,,	.. Baffin to replace Dart.
,, 403	Flight ..	.. Osprey to replace Flycatcher.
,, 406	,, ..	.. Osprey to replace Flycatcher.
One Coast Defence Training Flight		.. .. Osprey to replace Hart.

AIR POST STAMPS

By DOUGLAS ARMSTRONG

(Editor of "Stamp Collecting")

Air Post Exhibition

FROM May 7-12 the pick of the world's air post collections will be displayed at the Royal Horticultural Hall, Westminster, in competition for the championship of the cult and numerous lesser awards. Some have come from as far afield as Australia, New Zealand, South Africa and the United States, and together they constitute the most valuable and comprehensive assemblage of air mail material that has ever been brought together at one time.

Promoted under the patronage of Lords Rothermere and Wakefield, the London International Air Post Exhibition of 1934 will present for the first time a complete historical epitome of the rise and development of aerial mail carrying from the Balloon and Pigeon Posts of the Siege of Paris, through the pioneer experiments in the transport of mails by aeroplane, down to the inauguration of the latest section of the far-flung Imperial Airways system and the linking of North and South America by air post with Europe.

Under the short title of "Apex" it is the object of this exhibition to bring before the public notice the best aspects of this great collecting vogue and to show the progress of the air mail in its true relation to the normal and legitimate uses of personal and commercial postal service. Supporting the collectors' exhibits will be Government exhibits (including one by H.M. Postmaster-General in a special annexe) and others by inventors, engineering, aviation and airway operating companies which will combine into a composite manifestation of the air mail as a notable step in the progress of human affairs.

Everyone who is in the least degree air-minded, whether in sympathy with air post collecting or not, should make a point of visiting this remarkable demonstration of aerial advancement, which is to be formally opened by Lord Londonderry (Secretary of State for Air) at noon on Monday next, May 7, and will continue daily throughout the week.

Luckless Airmen's Stamps

The memory of the ill-fated Lithuanian aviators who lost their lives when their machine crashed on the final stage of an attempted flight from New York to Kowno, last year, is to be perpetuated in a new series of air mail stamps that has been prepared by Messrs. Bradbury, Wilkinson & Co., Ltd., stamp engravers, of New Malden, to the order of the Lithuanian Government, and will shortly be taken into use in that country. Two of the values portray Captains Darius and Girenas, whilst a third depicts their aeroplane in flight over the Atlantic interposed between maps of the American and European littorals. The remaining designs are symbolical in character, one representing the Spirit of Flight mourning over a broken aeroplane, another an aeroplane flying above a globe showing the two Continents, and the third the legendary White Knight of Lithuania accompanying an aeroplane in its upward flight. (We illustrate three of the forthcoming stamps by courtesy of the engravers.)

New Issues

An increase in the fee for postcards sent by air mail between Japan, Korea and Manchuria has led to the replacement of the 8½ sen denomination of the current air stamp series by one of 9½ sen, printed in carmine in the same design, showing a monoplane over Lake Hakone.

The recent inauguration of an internal air post service between Nicaragua and her neighbours is betokened by the application of a three-line overprinted in red upon the contemporary 20 centavos air mail stamp of that country, reading "Servicio Centro Americano—Vale 10 Centavos."

Air mail stamps of a definitive character are about to be introduced into the Latin American State of Costa Rica, the lower values depicting an aeroplane over the landing ground at San Jose, the capital, and the higher a winged figure of Mercury.

Now that the air post rate to Holland has been stabilised at 30 cents, a single air mail stamp of that denomination will be issued shortly in the Dutch Indies in an effective design of an aeroplane flying over the archipelago, illuminated by a sun on which the word "Luchtpost" is inscribed in faint letters.

Air Stamps at Auction

Latest realisations for air post stamps and covers in London auction rooms include £210 for a mint copy of the "Hawker" air mail stamp of Newfoundland, £45 for the "Halifax" variety with *inverted overprint*, £50 for an unused example of the "Miss Columbia" flight stamp, and £41 for a similar item on flown cover. A "De Pinedo" cover bearing the overprinted stamp fetched £31, whilst £40 was paid for a mint specimen of the first air post stamp of Colombia (1919).

A *Daily Graphic* Balloon postcard sold on behalf of the "Apex" exhibition funds went for £5, and a proof of the London-Windsor envelope in orange-brown on pale blue for £18. A South African Kenilworth-Muizenberg flown card made £12 10s., and a Ross-Smith flight cover with the souvenir stamp £24.

MEMORIAL STAMPS: Three of the designs in the new Lithuanian stamps issued in memory of the two Lithuanian airmen who lost their lives during an attempted flight from New York to Kowno last year.

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Royal Aeronautical Society Lectures

THE lecture by M. Louis Brequet on "Speed and the Future of Commercial Aircraft," which was to have been delivered before the Royal Aeronautical Society, has been postponed until October. On Thursday, May 31, the Society will hold a Conversazione in the Science Museum, South Kensington, by kind permission of the Director, Col. E. E. B. Mackintosh, D.S.O. During the evening the 22nd Wilbur Wright Memorial Lecture will be delivered by Professor B. Melvill Jones, A.F.C., M.A., F.R.Ae.S., Mond. Professor of Aeronautics, Cambridge University. The lecture, which is entitled "Stalling," will be illustrated. The approximate programme for the evening will be as follows:—8.30-9 p.m., reception by the President, Mr. C. R. Fairey, M.B.E., F.R.Ae.S., and the Council; 9.15-10 p.m., delivery of the 22nd Wilbur Wright Memorial Lecture by Professor B. Melvill Jones, A.F.C., M.A., F.R.Ae.S.; 10 p.m.-midnight, conversazione. A distinguished company will be present, and the President and Council earnestly express the hope that members and their guests will make early application. This most important function of the Society's year is held in the unique surroundings of the Aeronautical Section of the Science Museum, where many of the most important historical and representative aircraft have been gathered together. Evening dress with orders and decorations will be worn. Ladies are specially invited to be present. During the evening, by kind permission of the Air Council, the band of H.M. Royal Air Force will play. Application for tickets (5s. each, including buffet) should be made to the Secretary of the Society.

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PUBLICATIONS RECEIVED

Air Publication 818. *R.A.F. Drill and Ceremonial.* By C. Ll. Bullock. March, 1934. Price 3s. 6d. net. London: H.M. Stationery Office, W.C.2.

The Coronation Aerial Post—1911. By Francis J. Field and N. C. Baldwin, with foreword by The Rt. Hon. Sir Herbert L. Samuel. Francis J. Field, Ltd., Sutton Coldfield. Price 5s.

The History of British Aviation, 1908–1914. By R. Dallas Brett. London: John Hamilton, Ltd. Price 21s. net.

The Wright Cyclone Catalogue. Wright Aeronautical Corporation, Paterson, New Jersey, U.S.A.

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NEW COMPANIES REGISTERED

SHREWSBURY AERODROME, LTD.—Capital £200 in £1 shares. Objects: To promote, assist and encourage aerial navigation in all its forms and the study of aeronautics; the development of all sciences connected therewith, and the design and construction of aerial conveyances of all kinds, to establish and maintain a club, etc. Directors: Charles L. Parker, 53, Hill Crescent, Longden Road, Shrewsbury, mechanical engineer. Frederick R. Hockney, "Cranwell," Roman Road, Shrewsbury, traveller. Qualification: £5. Solicitors: J. C. H. Bowden and Sons, 3, Swan Hill, Shrewsbury.

EAGLE JOINERY COMPANY, LTD.—Private company. Registered April 23. Capital, £1,500 in £1 shares. Objects: To carry on the business of joinery manufacturers, builders, building contractors, builders' merchants, contractors for aeroplane woodwork construction, etc. Directors: Percival G. Waycott, 1, Alma Road, Plymouth; Cyril C. Waycott, 1, Alma Road, Plymouth. Solicitors: Wolferstan, Snell & Turner, Plymouth.